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EMERGENCY PLANNING IN ONTARIO:
A CRITICAL HISTORY AND ANALYSIS

P. Timmerman

Working Paper ERR-9

**EMERGENCY AND
RISK
RESEARCH**

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SUMMARY

In this report, the history and present status of emergency planning and response in Ontario are outlined and examined through the use of historical documents and case studies.

Preliminary sections outline the legal and political background of "emergencies" and declarations of "emergencies". The development of civil defence and the Ontario Emergency Measures Organization are discussed as the precursors of the present "Lead Ministry" framework of planning and response. The Texaco and Oakville Fires of 1978, the North York Gasoline Leak, the Woodstock Tornado and the Mississauga Train Derailment of 1979 are examined, as is the Pickering Nuclear Emergency Response Contingency Plan.

Recommendations and conclusions indicate the need for an emergency planning secretariat at the provincial level, and new support for the municipal emergency planning effort.

PREFACE

This report was originally begun as one of the activities undertaken by the Emergency Planning Project at the Institute for Environmental Studies, University of Toronto. It draws upon the work of a number of researchers connected with the project, notably Dale M.L. DuQuesnay, F. Christof Haussmann and Susan B. Hazen. An earlier version of this report dealt solely with the legal, political and historical background to emergency planning and response in Ontario, and was mainly derived from the work of the researchers mentioned above. Subsequently, it was decided to incorporate the results of a series of case studies into the report, so as to illuminate the present state of affairs. Three of these case studies have now been published as Emergency and Risk Research Working Papers through the Institute for Environmental Studies: i.e. "The Texaco Fire", "The North York Gasoline Leak", and "The Mississauga Train Derailment and Evacuation" (see Reference list for details). A fourth unpublished report by Oliver Coomes, Mark Rudolph and John Wilson (assisted by Bev Jaffray) on "The Woodstock Tornado" served as the basis for the relevant section here.

In the final section, specific recommendations and a general conclusion are presented. It is not too much to say that emergency planning in Ontario and, indeed, everywhere, is coming under intense scrutiny at present. For its part, the key provincial ministry, the Ministry of the Solicitor General, is responding to this scrutiny with a re-evaluation of its own. As a result, some of the recommendations may well be obsolete by the time of publication. This is, of course, all to the good.

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EMERGENCY PLANNING IN ONTARIO

INTRODUCTION

Having passed through a number of years without serious large-scale disasters, Province of Ontario, in 1979, faced fires, floods, tornadoes, and the largest peacetime evacuation in North American history (in the wake of the Mississauga Train Derailment). The cost to the province alone has been calculated at well over twenty-five million dollars - with the ultimate costs not yet in. The spring of 1980 has seen more evacuations from forest fires and train derailments.

All this activity and expenditure have focused attention on the emergency planning effort at the municipal, provincial, and federal levels of government. Partly for historical reasons and partly because of the key role it plays, the provincial planning effort is being subjected to the intensest scrutiny. From 1975 to the present the Province of Ontario has vested its emergency planning in various "Lead Ministries", which have singly and collectively taken over the role which used to be played by an Emergency Measures Organization (disbanded officially in April 1976). In effect, then 1979 was the first major trial for the "Lead Ministry concept".

It is these "Lead Ministries" and the planning effort which they theoretically oversee that dictate the thrust of this essay. The assessment and analysis presented are based, first, on the placing of the present situation in its historical and political context; and, second, on the exploration of a series of case studies, each of which has been chosen to illuminate one facet of emergency planning and response in Ontario.

This essay is divided into twelve major sections:

1. What is an "emergency"?
2. "Emergency" in a Canadian legal and political context.
3. The rise of Emergency Planning in Ontario.
4. The "Lead Ministry concept".
5. Municipal Planning - The Metro Toronto Emergency Bylaw.
6. Municipal Planning and Response - The Texaco Fire.
7. Municipal-Provincial Planning and Response - The North York Gasoline Leak.
8. Municipal-Provincial Planning and Response - The Oakville Pesticides Fire.
9. Municipal-Provincial Planning and Response - The Woodstock Tornado.
10. Municipal-Provincial Planning and Response - The Mississauga Train Derailment.
11. Provincial Planning - Pickering Emergency Response Plan.
12. Recommendations.

It will be observed that the case studies are so arranged as to enlarge progressively the scope of the discussion, as well as to reiterate organizational ideas examined in the course of analysis. Except for incidental references, the federal emergency planning effort is not specifically discussed in the case studies, even though it is an integral and almost defining element in the early historical and political review. This omission was decided upon because consideration of the federal involvement raises questions and matters of substance that go far beyond the boundaries of Ontario, or, for that matter, the reasonable limits of one piece of research.

1. WHAT IS AN "EMERGENCY"?

It is a constant theme of this essay that emergency planning operates in a modified improvisational format, since it owes its existence, in part, to the merits of an unresolvable dilemma: How do you create an unexceptionable plan for exceptional circumstances? On the one hand, one wants a well-conceived structure which utilizes the best elements of available resources under stressful conditions; and, on the other hand, one wants to avoid the inflexibility which leaves plans on shelves and which events leave behind.

It has become clear in recent years that in modern, complex, urban societies; the kind of emergency planning and response we have come to expect from, for instance, the fire department, has also become an imperative for much larger-scale, wider impact events. At one level, the public has come to expect more and more from governments in general in the way of social services. At another level, the perception is growing that society can no longer accept as inevitable the kinds of major disruptions characterized (in the case of natural disasters) by the label "Acts of God". On this scale, planning now becomes more essential - not only because of the sizeable resources which may or must be brought to bear on the disruptive event, but also because delay and mistakes are growing more and more costly. Failures of communication, co-ordination or supply can kill more people in a few minutes than a fireman may save in his entire career.

At the same time, this enlarging process has exacerbated another problem, a problem lying at the heart of the responsibility of governments to ensure public safety and maintain social order. To ensure the efficacy of a managed emergency, it may be necessary to increase existing executive powers. This tendency comes into conflict with civil liberties which become the possible objects of suspension or infringement in the event of a serious emergency. While there are those who would argue for the maintenance of complete civil liberty even in such circumstances, it remains the case that, for example, a man standing still in a crowd moving swiftly towards an exit represents a social danger society may not approve of.

More to the point, however, is the ever-present possibility for political abuse of the definition of the conditions under which emergency powers may be said to be in operation. This possibility is tied up with the characteristics of the use of the word "emergency" itself.

There are a number of words and phrases which are frequently used in what is philosophically called "performative utterance"¹ - that is, saying "I dub thee knight" or "I declare this highway open" does something through the very action of speaking it. "Emergency" is another such word; as "this is an emergency" is another such phrase. It is recognized that the use of the term radically alters not only social structures, but also priorities of response. In the United States declarations of "emergency" and "disaster areas" by officials bring into play recognized mechanisms (e.g. the National Guard). It has been commented upon a number of times that Canadians assume the exact same mechanisms are in place on this side of the border. In fact, in Ontario, this is not the case. The situation in Ontario has been complicated by the repeal of The Emergency Measures Act (R.S.O. 1970) which did contain a mechanism of declaration (see relevant section below); but the confusion has been of long standing.

A report on the Niagara-Prince Edward County Blizzards of 1977, for example, noted that:

In Niagara...they declared several emergencies and called them different things. In Prince Edward County they discussed calling the area a disaster area but refrained because there was a suggestion that that might cost the County money.²

In the spring flooding of 1979, the mayor of Dowling declared a state of emergency just to get people to leave their homes. Stories of mayors and reeves declaring "emergencies" and "disaster areas" on the assumption that Canadian Armed Forces would descend without charge are legion.

It is possible to suggest that this confusion, as indicated above, is part and parcel of the question of definition: how does one define the exception to the rule? Furthermore, while everyone knows a fire when he sees it, there can be real disputes over what is or is not an emergency. A heart attack in an intensive-care ward is not the same thing as a heart attack in a restaurant. For these reasons, many policy makers are of the opinion that the vaguer the definition enshrined in statute, the better. This opinion stresses the need for flexible response; for taking each situation on its own terms.

EMERGENCY PLANNING IN ONTARIO

Civil libertarians would argue that only rigid definition or clear circumscription of possible government interventions is a true safeguard against the formidable power of the state. While present governments may well be benevolent, and seek only to manage emergencies for the general welfare, the possibility of less benevolent governments coming into power and utilizing the vagueness of existing laws as a weapon must be guarded against. Specialists in crisis management might also refer to work that indicates that *ad hoc* structures and committees are less effective than permanent in-place agencies³; or perhaps even suspect that "flexibility" is another word for inconsistency and improvisation.

Of course, this is another variation on the unresolvable dilemma posed at the opening of this essay, and, in the case of an open, relatively free society such as ours, questions of the sort raised above are never entirely resolved, only struck into some sort of balance depending on the desires and circumstances of the polity.

In that spirit, a working definition, borrowed from the New Brunswick Emergency Measures Organization's Provincial Emergency Action Plan is given:

Emergency is defined as any abnormal situation requiring prompt action beyond normal procedures to limit damage to persons, property or the environment.

This definition is qualitative and common sense must be applied in judging whether an incident can be considered as part of the everyday situation or as an "emergency". The gray area between normal and emergency activity is very wide. What is "emergency" to one could be "normal" to another. To qualify as an emergency the four elements mentioned must be present, namely:

Abnormal Situation

Potential Damage

Prompt Response

Extra-Ordinary Procedures.⁴

2. "EMERGENCY" IN A CANADIAN LEGAL AND POLITICAL CONTEXT

It is worth stating two points at the outset of this particular part of the discussion: first, it is a general characteristic that the law concerning emergencies and disasters is not really very well defined at all; second, the bulk of the available material concentrates on the vital question of emergency powers as a jurisdictional problem rather than as a problem in civil liberties.

Curiously enough, however, the fountainhead of all subsequent discussion on the subject is one of the greatest cases involving civil liberties, and the battle for the sovereignty of Parliament. This is the famous Ship-Money Trial of 1637 (R. v Hampden, 3 State Tr., pp. 1011-13). Charles the First of England sought to levy taxes - disguised as ship-money - without Parliament by the expedient of declaring that a state of apprehended war existed between Holland and England (which was not the case). Holborne's counter argument centred around the right of the state (the Crown) to take "all measures which are absolutely and immediately necessary for the purpose of dealing with an invasion or other emergency" and to act "to restore the regular functioning of the machinery of government". Holborne delineated both the common law as to what constituted a present danger, and the subject's rights in such danger. Briefly, he said that all positive laws yield to "the law of necessity", a law enabling both king and subject to do whatever is necessary to ensure public safety. But this overriding and all-powerful law may only be invoked when there is a danger "now acting"; for

the law of practice doth not yield till there be an actual enemy.... It is not enough that there be but an apprehension.⁵

This may be said to characterize the relation between the subject and the state in time of crisis; and, by implication, it characterizes the relation between Parliament and the Crown. When we come down to the specific case of Canadian law, we find that the debate over rights and jurisdictions has been completely dominated by the B.N.A. Act (1867) and the interpretation of federal and provincial rights. It is impossible to describe within the space of a short paper what is now and has been for almost one hundred and fifteen years the leading constitutional issue in Canadian law. However, a few relevant points may be noted. In the B.N.A. Act, Sections 91 and 92 dealing with federal and provincial jurisdictions respectively, may conflict: Section 91 empowers the federal government to "Make Laws for Peace, Order and Good Government of Canada"; while Section 92.13 gives the provinces responsibility for property and civil rights "in the Province". It is in the resolution of possible conflicts that the broadening and narrowing of jurisdictions (and power) has occurred.⁶

In The Canadian Legal System, Gerald Gall describes the existing situation as follows:

Under the general power of Parliament, contained in S. 91 of the B.N.A. Act, the Parliament of Canada is given exclusive legislative authority to enact laws in respect of peace, order and government of Canada. The peace, order and good government clause, however, has met with various interpretations over the years. Under the emergency doctrine, Parliament may legislate, under the peace, order and good government clause, in respect of emergency situations arising out of war or famine but which survive the termination of the period of war or famine. In addition, in one case, it was held that national intemperance was a type of emergency contemplated under the emergency doctrine. Finally, as a result of the recent reference case concerning the constitutionality of the Anti-Inflation Act, 1974-75-76 (Can.), C. 75, certain types of economic emergencies might give rise to appropriate federal legislation (see Reference Re Anti-Inflation Act (1976), 68 D.L.R. (3rd) 452). In effect, upon the application of the emergency doctrine, Parliament may encroach upon those matters falling within provincial legislative authority under the provisions contained in S.92 of the B.N.A. Act.⁷

Stated crudely, the development of the case law surrounding the distribution of powers between federal and provincial governments has proceeded as follows: until the 1930's, and especially under Viscount Haldane in the 1920's, the power of the federal government to supersede a provincial government when there was a conflict became more and more narrowly circumscribed by the courts, to the point where such supersession could only take place during an "emergency". This became known as the "emergency doctrine". In what can only be called a slow reassertion of supremacy, the federal government has since gradually redefined what comes under the category of "emergency".

Haldane's view has been characterized as accepting federal intervention only "when the dimensions of provincial subject matter, through war, pestilence, or famine, has attained such scope in a veritable emergency that the circumstances were truly exceptional and extraordinary".⁸ In our own day, however, The Anti-Inflation Act, R.S.C. 1976, which lacked a clear statement of the emergency it was meant to be combatting, was nevertheless upheld by the Supreme Court of Canada, as "a situation of economic crisis imperilling the well-being of the people of Canada as a whole" (Laskin).⁹ Whether the truth lies at either end, or somewhere in the middle, the courts have generally been reluctant to make a definitive ruling, for jurisdictional reasons of their own: the judiciary considers it the right of Parliament to determine what is, or is not an emergency.

As recently as March 1979, the question of what rights the Federal Government had in an emergency, and especially what it could determine was an emergency was hotly debated in the House of Commons during the final reading of The Energy Supplies Emergency Act (passed, March 21, 1979). The Bill enables the government to allocate petroleum reserves on a priority basis, up to and including rationing, if

the Governor in Council is of the opinion that a national emergency exists by reason of actual or anticipated shortages of petroleum or disturbances in the petroleum market that affect or will affect the national security and welfare and the economic stability of Canada..¹⁰

On these grounds, and on the grounds that during an emergency the recall of Parliament would take too long, the Minister of Energy and Mines (the Honourable Alastair Gillespie) urged passage of the measure. Mr. G.R. Baldwin (Peace River-P.C.) thought otherwise:

We are giving the power to the government to call an emergency; not parliament.¹¹

Mr. Allan Lawrence (Northumberland-Durham-P.C.) went even further:

There are no guidelines, no restrictions, and no limitations. There is no definition of what may or may not be a "national emergency"... There is no one in Canada today, including the Minister, who can give us a definition of what a national emergency may be, yet we are being asked to give the Minister sweeping powers... The Minister is simply not able to give us a definition... I suggest in view of these wide-sweeping, dictatorial, authoritarian and frightening powers that is a terrible and terrifying admission for the Minister to make.¹²

The most powerful and controversial emergency declaration by the Federal Government still remains The War Measures Act, (R.S.C. 1970). Under the provision of this Act

the issue of a proclamation under the authority of the Governor in Council shall be conclusive evidence that insurrection, real or apprehended, exists and has existed for any period of time therein stated and of its continuance..¹³

This Federal power, substantial as it is, has not been free of controversy as to its acceptability; nor has it been clearly defined, either in court or in practice.¹⁴

What is worth noting here is the importance of regulations or Orders-in-Council - subordinate legislation which is empowered by the statute itself.

By this means detailed provisions need not be debated in the legislature, and flexibility can be maintained to enable the Government to act quickly to meet an unexpected case without initiating new legislation... Every power to make regulations amounts to a suspension of Parliamentary democracy, the extreme example being the War Measures Act which empowers the government to make by Order-in-Council (that is, by government order without prior Parliamentary approval) any laws it deems advisable for the security, defence, peace, order and welfare of Canada.¹⁵

This subordinate legislation is now becoming part of the Energy Supplies Emergency Act. The elaborate regulations to control (possibly) the rationing or allocation of oil, gas, and electricity are being put in place, with some 30 projects underway by July 1979.

At the level of the province of Ontario, as will be discussed in more detail when we come to sketch out the present state of emergency planning, much of the planning and response is solely based on regulation and Orders-in-Council. No statutory authority *per se* exists, although it is - perhaps correctly - assumed that the authority inheres in the prerogatives of the government. Much of the emergency legislation which does exist in statute is scattered in highway traffic acts, health acts, mine safety, etcetera. This was not always the case; and having raised some of the pertinent issues and having presented some of the relevant legal context, it is time to turn to the specific historical and political situation in Ontario itself.

3. THE RISE OF EMERGENCY PLANNING IN ONTARIO

THE FIRST WORLD WAR

In his book, "English History 1914-1945", A.J.P. Taylor notes that it was with the First World War that government first began to intervene seriously in the lives of ordinary men and women. The exigencies of wartime required the mobilization of a large portion of a nation's resources, and this necessarily required the institution of a planning sector never subsequently eliminated:

The mass of people became, for the first time, active citizens. Their lives were shaped by orders from above. They were required to serve the state instead of pursuing exclusively their own affairs. ¹⁶

In Canada, farther from the primary fighting zone, intervention was less overwhelming and much less comprehensive. It was taken for granted that the Federal Government had control over the primary war effort at home and abroad; but apart from militia and defence, the early years of war, at least, saw little government presence in daily life.

In Ontario, initial provincial emergency planning was a haphazard and voluntary business. Quasi-militia groups were formed by various civilian organizations, with little or no encouragement from the Department of Militia and Defence. With no encouragement from the government, the Ontario Motor League's auto clubs mounted a test mobilization in December 1914, which consisted of collecting two thousand troops from forty locations around Toronto and converging on Queen's Park. Unannounced test mobilizations of troops - spurred by rumours of German raids from the United States - were actively discouraged as being "ridiculous nonsense". ¹⁷

But as the war wore on, sterner measures such as The Organization of Resources Act (1916); the Order-in-Council enabling the Minister of Agriculture "to guard the national interests in connection with the production of foodstuffs"; light and fuel rationing; licencing and censorship - all became part of the provincial war effort. ¹⁸

THE INTER-WAR YEARS

With the end of the war, some of the harshest measures - those involving rationing and production committees - were dismantled, but the increasing complexity of society, combined with the tendency for judicial decisions to give the provinces rather than the Federal Government residual rights under the B.N.A. Act, led to further extensions of provincial services:

The learned judges (of the Supreme Court of Canada) found it increasingly difficult to find any subject matter that did not touch upon property or civil rights or was not essentially a local problem. This process, which began during Oliver Mowat's premiership, has continued and has resulted in the provinces acquiring most of the new territory that has come under the aegis of government control. Thus the provinces have been assigned responsibility for the regulation of intraprovincial production, trade, and marketing; wages; hours of labour; unemployment insurance (transferred to the Federal Government by constitutional amendment in 1940); workmen's compensation; industrial disputes; trade union legislation; health regulations; and insurance legislation. ¹⁹

Inevitably, these new jurisdictions and the increased visibility of government promoted a slow change in public attitude, from the hitherto accepted principles of self-help and self-sufficiency in times of trouble, towards the expectation of governmental responsibility and assistance. An excellent example of this trend is found in the creation of what - outside of the regular police and fire agencies - may be considered the first specifically emergency oriented agency in Ontario, Mine Rescue. Until 1928, Ontario had been content with the old Mining Branch (later the Department of Mines) which limited its function to the enforcement of safety rules. In 1928, the Hollinger Mining Disaster killed 38 men, and required the special dispatching of a train loaded with equipment from the U.S. Department of Mines in Pittsburg, Pennsylvania. A Royal Commission recommended the introduction of a mine rescue program in Ontario, following which recommendation rescue stations were set up in the North.

With the approach of the Second World War, the first national organization specifically designed to prepare for and cope with the maintenance of public services

during wartime was created. This organization, the Air Raid Precautions Committee, was formed in 1938 as the responsibility of the Federal Department of Pensions and National Health, and relied on municipal and volunteer organizations for most of its strength. ²⁰

THE SECOND WORLD WAR AND BEYOND

As in the First World War, only more so, the federal government became the supreme arbiter in the allocation of resources and planning for the new wartime emergency. "Recruiting, training, arming, plans, policy, and finance were all in the hands of an expanded federal government." ²¹ As Mitch Hepburn, the Premier of Ontario, remarked about the power of Ontario at this time: "We have reached the status of a county council." ²² However, towards the end of the war, the Ontario government began to anticipate a return to peacetime normalcy; and, in anticipation of an expanded role in peacetime planning, created the Ministry of Planning and Development, which concerned itself with municipal planning, flood control and water use, timber control, and other aspects of resource management.

The essentially negligible threat posed by invasion and bombardment from Germany - and somewhat later, from Japan - slowly became more and more evident as the war progressed; and ARP took on the aspect of a public morale booster as much as anything. Yet when it was eliminated at war's end, enough of the elements lingered on, so that, with the onset of the "cold war", there came into existence something akin to a "cold" civil defence structure for dealing with a new type of more devastating and more realizable "air-raid". This was part and parcel of a new phenomenon: though wartime structures had continued for a short time after the First World War, they had been eventually eliminated, especially at the governmental level (outside of military requirements); after the Second, however, the transition to peacetime only went a short distance before coming up against new demands for a cold war military posture at various levels of government. This is perhaps best exemplified by the prolonging of the life of the federal wartime Cabinet Defence Committee.

NEW RESPONSIBILITIES

Before going on to describe new developments up to the present day, a brief sketch of what follows may be helpful. Emergency planning in Ontario after 1950 can be characterized and even modelled historically by three observed patterns:

1. The perceived goal of civil emergency planning has shifted linearly. There has been a gradual shift from planning for wartime emergencies to planning for peacetime emergencies; from civil defence to disaster management.
2. Federal direction of and participation in provincial emergency planning has been an oscillating - not to say fluctuating - wave throughout the modern era.
3. Provincial organization itself has gone in a circle. What began as an all or multi-ministry concern, subsequently became a specific agency responsibility, and has now returned to being the concern of a number of ministries once more.

Most of the basic conflicts, confusions, and questions arising out of Ontario's history of emergency planning involve the extent to which these three patterns have interfered with each other.

Under the provisions of the N.A.T.O. Treaty signed in 1949, Canada instituted a Civil Defence Program, and appointed a National Civil Defence Coordinator in November of the same year. Recognizing that this new program would involve areas of provincial jurisdiction, the federal government invited the provinces to a ministerial conference in August 1950. It was there agreed that civil defence must centre on local organizations; and, as with ARP, the federal government would guide, direct, and coordinate the program. In cooperation with provincial and local authorities, the federal government undertook to provide an advance warning system and warning sirens to municipalities considered to be Civil Defence Target Areas; it also undertook to provide facilities and training for civil defence leaders and workers, and to conduct research and development in civil defence matters. The conference was chaired by the Minister of National Defence, and the thrust of the proposals made was to prepare civil defence as an adjunct to military defence.

The program was adopted by Ontario in October 1950, and placed within the purview of the Provincial Secretary. A formula for financial agreement with the provinces whereby fire hose coupling would be standardized, and radiological equipment, medical supplies,

etc. stockpiled, was entered into in 1951. When the hose coupling program was completed in 1955, the province and the federal government agreed to contribute financially to municipal civil defence. Up to this point, although there had been no financial assistance at all, 146 municipalities in Ontario had begun volunteer Civil Defence programs. By this new agreement, the municipalities could reclaim up to 75% of their expenses from a fund supplied 2/3 federally, 1/3 provincially.

This new program was part of an increased Ontario presence in civil defence matters, agreed upon following a meeting between the federal minister responsible for civil defence, and a delegation from Ontario including the Premier and the Provincial Secretary. Responsibility for civil defence was transferred (1955/1956) to the Department of Planning and Development; and a series of Orders-in-Council was promulgated setting up a Planning Committee for Civil Defence under a Civil Defence Committee composed of deputy ministers and senior executives of government agencies.

It became policy to start consolidating municipalities into larger civil defence units. In 1960, there were 47 municipal planning units preparing plans for 271 municipalities (and area municipalities) in Ontario; financial assistance programs meant that up to 90% of municipal expenditures could be recovered.

NEW COMMITMENTS

From 1950 to 1960, the inter-governmental structure of emergency planning centred in Ontario developed along reasonably straightforward federal, provincial and municipal lines. Within the Government of Ontario itself, although responsibility for civil defence was vested in one designated ministry (which designation shifted from time to time), it appears that every other relevant ministry - taking its cue from wartime experience - was also necessarily involved in the planning process. This became especially clear in 1955 and 1956 when the new Civil Defence Coordinator was established both as the Chairman of the Planning Committee for Civil Defence and as the Secretary of the Civil Defence Committee at deputy ministerial level. Looking ahead, this involvement contrasts with the later experience under the Emergency Measures Branch (EMB, Ontario); when, in 1960, EMB assumed what was then regarded as full-scale planning responsibilities, the other ministries slowly lost interest.

At the federal level, there was a growing emergency planning presence, including the establishment of an Emergency Measures Organization (EMO) in 1957 to plan for the maintenance of government leadership and resource management during an emergency, and to contribute to N.A.T.O. civil defence planning. In 1959, federal EMO also assumed responsibility for civil defence from the Civil Defence Branch (disbanded).

In two Ottawa Conferences in 1959, the federal government proposed to upgrade and to rationalize existing provincial Civil Defence programs, in light of the greatly increased capacity for destruction implied by the deployment of the H-bomb and other weapons (the Soviet Union announced a successful I.C.B.M. launch in August 1957). The basic thrust of the new proposals was the supersession and assimilation of volunteer-based organizations by more formal government organizations. This required all levels of government to organize a war-time emergency measures capability within their departmental structures to which the former Civil Defence volunteers now became attached. Ontario responding to "a change in policy of the Dominion Government",²³ abolished the Civil Defence program, and established, by an Order-in-Council of January 14, 1960, "with terms of reference having to do with plans for survival and continuity of government", an Emergency Measures Organization in the Department of Justice with responsibility for planning resting in the Emergency Measures Committee, made up, again, of deputy ministers and senior agency officials.²⁴

This upgrading of emergency planning was a provincial response to a federal proposal: even at the outset, the provincial government set strict boundaries as to its commitment, not just because it was uncertain about the level of costs it might incur during wartime or in training for wartime, but also because it believed that Civil Defence and emergency measures (as then defined, i.e. strictly wartime) were essentially matters for the federal government. Correspondence between Ontario and the Minister of National Defence (the Nickle/Pearkes Correspondence), affirmed that Ontario accepted the concept in principle, but did not want to get harnessed with excessive financing of emergency measures programs.²⁵

The new Emergency Measures Program was regarded as being a provincially and municipally supported federal program, which, considering that the vast majority of the funding came from the federal government, was not unreasonable. As we shall see, when the

federal government began to cut back on its expenditure for the program in the early 1970's, Ontario had to decide whether or not to make up the difference, a decision which was complicated by the slow re-definition of the role of civil emergency planning that had taken place in the interim. In the late 1950's and early 1960's, however, the Diefenbaker government was seriously concerned about the possibilities of nuclear war, and apart from the policies and programs outlined above, there were also evacuation and fallout shelter policies - the federal government, for instance, requesting federal, provincial and municipal authorities to carry out shelter surveys across the country.

THE EMERGENCY MEASURES ORGANIZATION

In its early days, then, the Emergency Measures Organization (the overall title, not to be confused with the slightly later creation of the Emergency Measures Branch as the central unit in charge of local Emergency Measures Organizations) saw its objective as part of the national objective as defined, as late as 1968, by a review of federal and provincial Emergency Measures Organizations, "Project Phoenix":

The national objective of Canadian civil emergency planning is to develop in peacetime, civil plans and preparations designed to ensure the nation's ability to survive and recover from any war emergency and which, together with military defence measures, represent the total national defence posture of Canada.²⁶

To this end, the Chairman of EMO (who eventually became a Deputy Minister in 1962) used the planning committee both as a practice ground for the continuation of government in wartime and as a vehicle for persuading each ministry to plan consistently for such contingencies.

In April 1963, the Emergency Measures Act was passed by the Ontario Legislature, creating the Emergency Measures Branch. In 1965, the Act was amended, giving the responsible minister (then the Attorney General) declarative powers (see Appendix 1). An emergency was defined as either "a real or apprehended war, invasion or insurrection proclaimed to exist under the War Measures Act (Canada)" or a natural emergency as declared by the Minister. It further directed territorial municipalities to formulate emergency plans "under the guidance of the Director", i.e. the Director of the Emergency Measures Branch. In its first Annual Report, the Emergency Measures Branch set out what it believed were its functions: Briefly, these functions are:

- to provide planning guidance to provincial governments and their services;
- to develop the operational plan to be used in the event of an emergency by the Ontario Government;
- to recommend measures for the protection of the civil population and develop public education programs to provide guidance for industry in emergency planning;
- to ensure every effort is made to develop plans that will protect life and property.²⁷

A 1973 submission to the Justice Policy Field Committee clearly outlines the relationship that developed over the years between the EMB and the municipal organizations:

Through the Emergency Measures program, municipal governments have been encouraged to group themselves into Emergency Measures Organizations (EMO's) established by By-Law, comprising key elected and appointed officials of the municipalities acting in concert with non-governmental elements in the community to deal with emergency situations. There are some 47 EMO's organized in this manner which serve over 800 of the 900 municipalities in Ontario.

These EMO's have an Executive Committee with the Chairman normally the Mayor of the larger city and Co-chairman the Warden of the County together with representation from both City and County Councils. This Executive Committee sets the policy for the emergency measures planning and preparations that need to be done and they have under their direction a Planning Committee consisting of the service heads and Key Directors of the services in the community, such as police, fire,

EMERGENCY PLANNING IN ONTARIO

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public utilities, hospitals, transportation, industry, volunteer agencies, etc. In the case of Regional Government, the Executive Council is, in effect, the Emergency Measures Committee.

Through the Emergency Measures program, the salary of a municipal Emergency Planning Officer/Coordinator is subsidized in order to provide assistance to these officials and agencies in coordinating their plans into a coherent whole, and then, if an emergency situation arises, assists (sic) them in dealing with the emergency . . . ²⁸

At the municipal level, then, the EMB in Toronto had a large measure of control over municipal emergency planning, both standardizing and monitoring the development of their plans.

Above the municipal level, Ontario was divided into seven Emergency Planning Zones, each with a Provincial Field Officer who encouraged and oversaw the planning and programs in his area. He also provided liaison between the municipalities in his zone and the EMB in Toronto, or with other provincial or federal officials as required. While these zones eventually became mere zones of demarcation, originally they were to be

the lowest level at which the Provincial and Federal Governments will operate a combined headquarters and from which they will exercise operational and administrative control in a national emergency... to permit decentralization of authority to a lower level... to provide support to the Army in carrying out its assigned role in areas damaged by nuclear explosion or seriously contaminated by radioactive fallout. ²⁹

At this time, Ontario EMO had only marginal interest in natural or peacetime emergencies, recognizing that there would be some "spin-off" from civil defence training and equipment. As late as 1970-1971, a program review sheet emphasized the shelter surveys, the continuity of government role, and went on to say:

It is also necessary to continue planning for natural emergency in accordance with The Emergency Measures Act. However, this activity must not unduly reduce the allocation of work to the prime object of the program and should not involve more than 20% of total working time. ³⁰

During the late 1960's and early 1970's, however, it became clear that Emergency Measures Organizations across the country were in serious trouble because of new federal "rationalizations" (restriction of funding) and the new planning, programming and budgeting system (PPBS) which emphasized the sort of tangible returns not found in planning for a nuclear war.

In his Ph.D. thesis, "Organization-Environment Interaction: Organizational Legitimacy and the Non-Autonomous Organization" Rodney Kueneman has outlined the general history of the EMO's in this period, and the new struggle for legitimacy faced by the provincial EMO's. In one paragraph he sketches the position of federal and provincial EMO programs at this time:

At the end of the 1960's there was a distinct difference of emphasis between the federal and provincial EMO programs. Depending less on federal monies, the provinces turned more consistently to a primary emphasis on peacetime disaster planning and the success of many provincial efforts in serious natural disasters strengthened the credibility of their programs with their governments. The Federal EMO, however, still only directed secondary consideration to peacetime crisis planning. The 1970 Federal policy review further de-emphasized defence policy and as a result Federal EMO was forced to modify its emphasis by "trying to give more positive direction to having a total emergency response rather than a total wartime emergency response with a peacetime spinoff". ³¹

This is not quite accurate as regards the federal emphasis, since as early as 1965, the Minister of Industry, C.M. Drury said, at a Federal-Provincial Conference on Emergency Planning:

Greater emphasis has been placed on the need for Emergency Measures Organizations to be ready to cope with peacetime disasters. This is an important indication of the practical usefulness of the EMO's.

The involvement in providing assistance in peacetime should go a long way to counteract public indifference.³²

Nevertheless, the practical result was the same as that outlined by Kueneman (1975). Of course, the ultimate source of the difficulty was public indifference, an indifference only set aside during the Cuban Missile Crisis and sporadically since. Where it became fatal was when that indifference became government policy. With the onset of détente, and the need for some more viable policy becoming greater and greater, a new national objective was unveiled by the Federal EMO in September 1970 - one month before the October Crisis:

To develop throughout the nation, non-military plans and preparations for responding to emergencies caused by internal or external threats to the social, political or economic structure of Canada.³³

It is to be remembered that fully one year before, in October and November 1969, the spectre of the FLQ and its "three-point plan" for revolution had first presented itself in the wake of the Montreal police strike.

To the province of Ontario, the two aspects of this altered national objective for emergency planning that most concerned officials were, first, that increased federal involvement in planning for peacetime social and political emergencies was not to be accompanied by any perceptible increase in funds; and second, that the Emergency Measures Organization was venturing into ill-defined territory by speaking of "internal or external threats to the social, political or economic structure of Canada". The handling of, and planning for civil disorders, for instance, was deemed to be a police matter, and EMB (Ontario) was extremely reluctant to become involved in anything but a supporting capacity, and even then, only upon request. Moreover, the broad labelling of types of emergencies as "threats" implied a possible strengthening of the loosely defined federal powers for intervening in peacetime provincial emergencies.

At the same time, if there was to be increased emphasis in the Emergency Measures program on planning for peacetime emergencies, then that almost necessarily meant that there must be a like interest in provincial concern for the program, as the provinces were generally acknowledged to be the party of first resort. It is fairly clear, in retrospect, that it was this set of problems that was the forcing house for the "Lead Ministry" concept.

4. THE "LEAD MINISTRY" CONCEPT

There are various accounts of the derivation of the concept of "Lead Ministries", but two basic ingredients went into its make-up. In the first place, the Canadian Emergency Measures Organization, in the wake of the October Crisis in 1970, underwent a re-assessment of its own. The result was the Dare Report, entitled "The Enhancement of Crisis Handling Capability Within the Canadian Federal Structure", and written by a committee under Lt.-Gen. Michael Dare, the man who "masterminded the role of the Armed Forces in the 1970 Quebec kidnapping crisis".³⁴

Considering the conception and the midwife, it is hardly surprising that what was recommended was

A permanent cell within the Privy Council Office to anticipate and respond to emergencies, including civil disorder and insurrection.³⁵

In the Dare Report, it was envisaged that the cell, or secretariat, would form a "symbiotic relationship" with departments recognized as being "primary operating level for crisis handling within the federal structure".³⁶ Canadian Emergency Measures Organization itself would be reorganized into an advisory body under the direction of the secretariat. Once again, this new configuration was accompanied by a new outline map of the terrain to be covered:

Due to the geopolitical structure of Canada, national crisis are seldom the exclusive concern of one level of government. Most crisis-producing incidents occur within the geographic environs of the provinces and are dealt with effectively at that level. More and more, however, due to an increasing degree of interdependency between levels of government in crisis matters, *the federal authority has become involved in helping to manage provincial crises.*³⁷ (my italics)

This reflected the earlier position as outlined before the October Crisis, with added emphasis on the federal capacity for intervention in provincial matters, combined with the capacious new response structure for managing federal resources efficiently in response to crises.

The second element in the new conception seems to have been initiated at the provincial level. As early as June 1972, six months before the Dare Report was given to the federal government, an extensive review of the EMB and the EMO's around Ontario suggested not only increased provincial concern in planning for peacetime emergencies - sparked off by what had been a two-year freeze in federal funding that showed no signs of coming to an end - but the review also suggested that a Task Force should be set up of "operational components" of certain ministries. This "Provincial response coordinating group" would provide a new mechanism for matching up various ministries to various possible emergencies within each ministry's perceived competence. Each ministry would plan for emergencies that utilized its expertise, and would co-opt the resources of other ministries should the need arise.³⁸

From the EMB's point of view, the thinking behind this proposal was essentially simple: it was an attempt to get some leverage on various ministries. Not only had the planning committee of deputy Ministers *et al.* failed to generate any significant momentum over the years; but, much more seriously, in emergencies where ministries could assist with men or equipment, the EMB had no power beyond persuasion to call upon any of these resources. Ministries were reluctant to dig into their own budgets without higher-level assurances that there would be rebates. Furthermore, up to 75% of the EMB budget derived from the federal government, and that was now frozen: with a curtailed budget, EMB's limited equipment and staff could only assist and facilitate any large-scale response by other agencies. By involving directly each relevant provincial ministry, EMB hoped that short and long-range interest could be created and encouraged. Emergencies such as the Air Canada crash at Malton (1970), and the Sudbury-Lively-Field windstorm (1970), had demonstrated the effectiveness of EMO's and the inter-ministerial cooperation that could sometimes be engendered.

The Great Lakes flooding in 1973, however, exposed the inadequacies of provincial procedures. Provincial policy concerning flood victims (as enunciated to the public by the Ministry of Natural Resources prior to the floodings) was that no assistance would be given to people who had been so foolish as to build on the flood plain. The EMB predicted that both the policy and the homes would be swept away in the flooding, and nothing was done until the crisis was upon the government. It was only a month after the flooding began

that equipment was reluctantly forthcoming from ministries such as the Ministry of Transport "to the extent that it is available"; and it was about the same time that an *ad hoc* Flood Damage Working Group had to be set up to process claims for assistance.³⁹

More constructively in this period, emergency plans were being formulated in various areas: the Ministry of the Environment's plans for hazardous spills, the Ministry of Health's plans for Bruce and Pickering nuclear stations, and the Ministry of Natural Resources' plans for evacuation and reception of communities during forest fires - all were done in conjunction with the EMB. The EMB felt that the new "Lead Ministry concept" might grow out of these and other considerations, and pressed the idea in various forums through 1973 and 1974. In the meantime, following the recommendations of the Dare Report, Canada EMO underwent a metamorphosis into the National Emergency Planning Establishment (publicly known as EPC - Emergency Planning Canada). The EPC also began to sound out the "Lead Ministry" approach, and requested relevant federal government departments to respond to a list of potential emergencies in Canada, stating for which emergencies they would lead the response structure, and for which emergencies they would be able to supply resources upon request. Again, in "leading", a particular department would assume full responsibility, and would coordinate - and co-opt if necessary - the resources of other agencies. This was similar to the Ontario EMB proposals, except that Ontario was still left with the problem of what to do with the EMB itself, in the face of the federal budget restrictions. There were two major proposals. The first was to let EMB "close the ring", as it were; that is, functioning at low level, EMB would use its small permanent staff and its municipal apparatus to assist the large lead ministries. The second was to reconstitute the EMB as the provincial equivalent of the new federal secretariat: EMB, under the direction of the Solicitor General, would be the authorizing and coordinating agency in charge of all provincial ministries' responses to emergencies. The consensus gradually crystallized around the first of the two proposals, EMB proposing to serve as a consultative and monitoring body.

In the event, a more radical approach finally prevailed. The Provincial Treasurer was moved in 1975 by various considerations to review all programs "with a view to eliminating those, such as the Emergency Measures Organization, which have outlived their usefulness".⁴⁰ It appears that it was also his view that, since federal financing was diminishing, and the "Lead Ministry" concept seemed to be reasonable, there was no need for the Emergency Measures Organization at all: its role could be taken over by the new lead ministries acting in concert (see Table 1).

Rodney Kueneman diagnosed the death of the Ontario EMB as being the result of four causes. First, the budgetary restrictions at the federal level resulted in cut-backs in planning and training staff which lowered EMB's "presence"; second, the "fundamental misconception" of the EMO's as federal nuclear response organizations lingered on in the mind of the legislature*, exacerbated by a poor structural set-up in the Attorney General's department (EMB had been reduced from Deputy Minister's rank some years earlier); third, the low disaster probability of the province never gave the organization "occasion to demonstrate a distinctive competence" (as had occurred in other provinces, most notably Alberta and New Brunswick); and fourth, Kueneman sees a strategic error in the decision of the organization

to place its focal interest in peacetime emergency planning on the municipal program... largely concerned with the administration of aid to municipalities,

although he states that this was done

since the municipalities would be the organizations most heavily involved in any peacetime disaster response. While this may have been a sound policy for the state of emergency preparedness in the province overall, it was to contribute in a significant way to the organization's demise.⁴¹

*The Emergency Measures Organization as a whole suffered from linguistic misconceptions as well, analysed graphically by Mr. Andrew Currie, (Deputy Minister of Urban Affairs and senior official responsible for EMB-Manitoba) in an address given in November 1972: "The title 'Emergency Measures Organization' is now quite well known throughout Canada, although this is not one with which we in Manitoba are too happy, as the word 'organization' implies a force in being... Some people ask, 'Yes, but where was Emergency Measures?'... Emergency Measures are not a special unit or group of people, standing by to save the day in case of a major disaster."⁴²

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Table 1. Selected economic information for the Province of Ontario for years 1960/1961-1974/1975

Fiscal year ending	Total Emergency Measures Organization budget-Ontario (dollars in thousands)	Provincial EMO expenditures on Salaries % of total EMO budget	Provincial share of total EMO budget % of total EMO budget	Provincial Government expenditures on EMO % of total EMO budget	Provincial Government expenditures on Health and Welfare % of total Prov. budget	Provincial Government expenditures on Gov't administration % of total Prov. budget
1961	1,016	17.1	19.1	.026	19.5	1.08
1962	1,376	17.0	22.4	.029	22.4	.97
1963	1,876	14.1	19.0	.036	20.2	.97
1964	1,908	14.6	19.7	.035	16.9	.90
1965	2,269		18.4	.033	18.1	1.23
1966	2,153	17.2	20.6	.031	19.3	.96
1967	2,576	18.4	18.7	.027	16.9	1.20
1968	2,152	20.7	18.6	.017	18.2	.82
1969	1,511	26.4	17.8	.0097	17.8	.75
1970	1,463	22.5	17.9	.0080	20.9	.94
1971	1,395	24.4	18.0	.0065	21.8	1.34
1972	1,328	26.7	17.5	.0045	26.3	.88
1973	1,460	27.3	20.0	.0045	37.8	
1974	1,552	26.7	25.0	.0053	36.0	
1975	1,654	63.4				

Source: Compiled from the "Public Accounts" for the Province of Ontario (reprinted from Kueneman 1975)

In fact, in recognition of this emphasis on their programs, there were representation from a number of municipalities such as St. Thomas, Windsor and London, complaining strongly about the ending of the provincial program and the lack of prior consultation.

They pointed to the November 1974 memorandum to the Provincial-Municipal liaison Committee, which stated that government policy, as agreed on by Cabinet, was that

The Province will... provide financial assistance to municipalities at the current budgetary level and its equivalent in future years to take account of inflation... Overall supervision and technical advice on emergency planning will continue to be provided through an Emergency Planning Branch which is being re-oriented to reflect a greater emphasis on peacetime emergency planning.⁴³

The Emergency Measures Branch was disbanded at the end of 1975, its staff and servicing equipment absorbed by other agencies and ministries, and the Emergency Measures Act was repealed (April 1976). It is something of a reflection on the seriousness with which the government took this step that at no time during the repeal debate was any real thought given to the consequences of repealing the only hard extra emergency powers under Statute in the province.

FROM CONCEPT TO PRACTICE: THE LEAD MINISTRIES

By two Orders-in-Council of 28 May 1975 (see Appendices II and III) the new structure came into being with the creation of the Cabinet-level Emergency Planning Committee and the designation of certain "Lead Ministries".

In January 1979, designated ministries and their areas of responsibility were as follows:

MINISTER

Energy	Energy supply matters
Environment	Spills of chemicals, oil or other contaminants or toxic agents; gas or oil pipeline breaks
Health	Epidemic
Intergovernmental Affairs	Funding and coordination of extraordinary Provincial expenditures on emergencies
Labour	Nuclear reactor accident with off-site effects Heavy water plant accident with off-site effects
Natural Resources	Flood Forest fire
Solicitor General	Major air crash Snow emergency Other peacetime emergencies War emergency

From these ministries (see Fig. 1) comes the Lead Ministry Coordinating Committee, made up of various planners from each of the relevant ministries, as well as occasional input from the EPC Regional Director and the Association of Emergency Planners of Ontario. Above this Committee, in the Emergency Planning Committee of Cabinet, are the Ministers of the Lead Ministries, the Attorney General, and the Chairman of the Management Board. It is their responsibility

to monitor the state of emergency preparedness in Ontario and to review at regular intervals the state of emergency planning in the ministries and agencies of government. ⁴⁴

As may also be seen from the diagram, the policy-making structure is embedded in the Ministry of the Solicitor General, partly for the historical reasons sketched out above, partly because of the Solicitor General's overriding responsibility for public safety, and partly because the policy structure loosely follows an initial emergency response structure. This response structure is presumed to function as follows: a private individual or, more likely, a municipal official who feels that provincial assistance may be required at an emergency (undefined at present), contacts the nearest detachment of the Ontario Provincial Police. They, in turn, relay the information to OPP Headquarters, where established procedures enable them to pass the information to a contact person in the appropriate lead ministry; and, in some cases, the OPP detachment may get in touch with field offices of the ministries directly.

This new response structure attempts to do two things: one, it alters what had been heretofore an improvisational communications situation, whereby the local official either telephoned the EMB or a ministry or the Premier's office; two, it partially formalizes a link between the province and the municipalities which had been part of the function of the EMB in emergencies.

Funding under the "Lead Ministry" program on the provincial level comes from the Emergency Assistance Fund, administered by the Ministry of the Solicitor General and "audited" by the Ministry of Intergovernmental Affairs. The general consensus is that expenditures on emergencies are made when necessary and the politics of recouping funding is left until later. This means, in practice, that senior ministry officials are relatively confident that their Minister will support them when Cabinet considers reimbursement. Funding on the municipal level generally functions after the declaration of a "disaster area" by a provincial minister. This initiates (see Fig. 2) a procedure whereby a Disaster Relief Committee (installed by the municipality) raises funds from private and municipal donations which are matched by the Ontario government. In exceptional circumstances, the Ontario government raises the ratio of its matching funding (the recent disastrous flooding at Field of April 1979 resulted in 4 to 1 matching). The Disaster

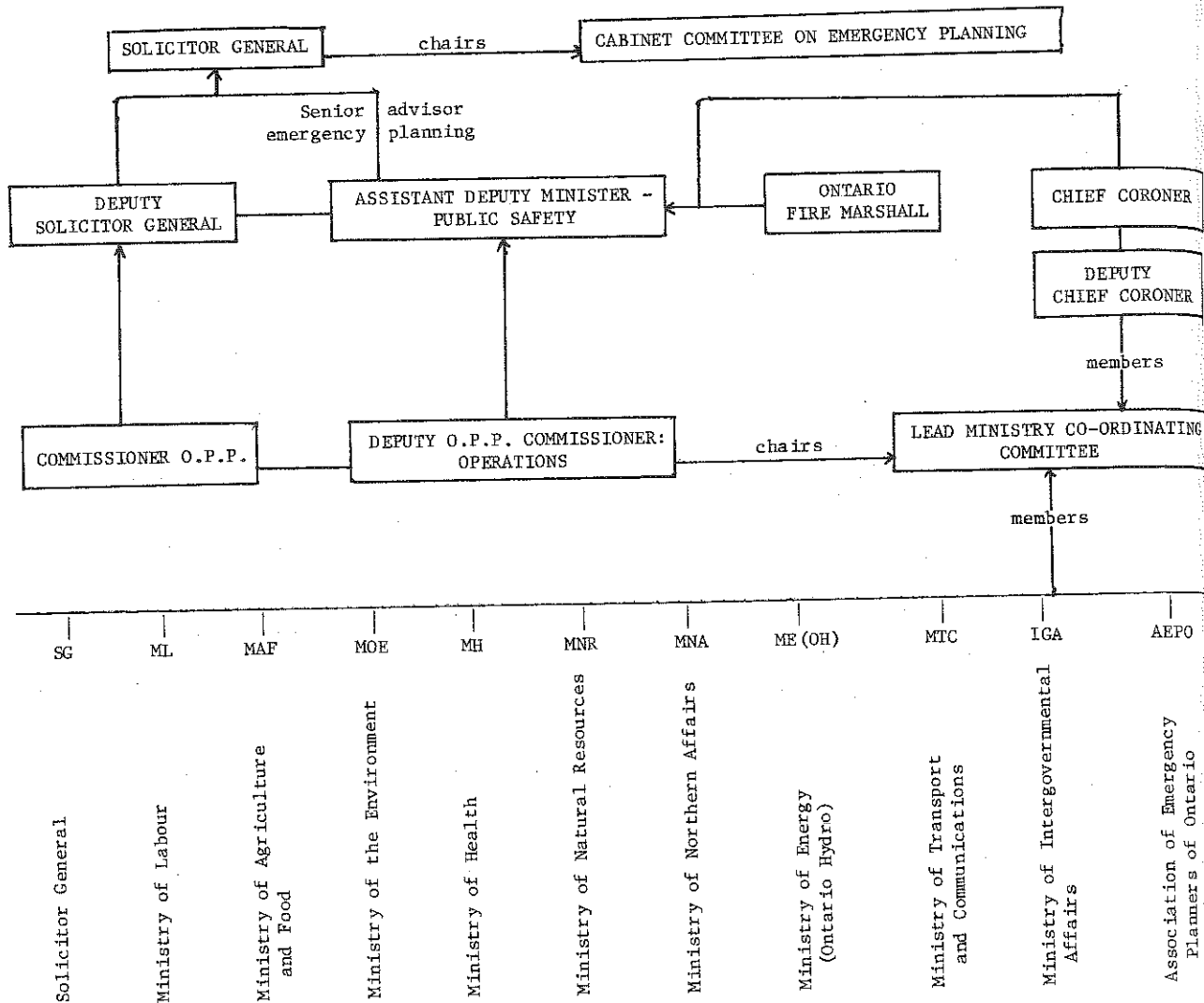


Fig. 1. Senior policy making structure Ontario Emergency Planning (Haussmann and Timmerman 1979)

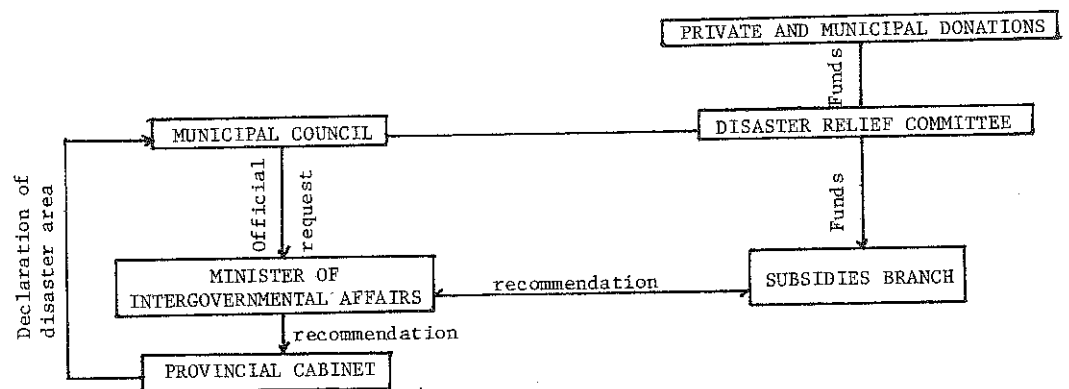


Fig. 2. Disaster relief assistance flow (Haussmann and Timmerman 1979)

Relief Fund thus created is overseen by the Ministry of Intergovernmental Affairs and the local Disaster Relief Committee, and compensation is awarded usually for principal residence and small business damage (see the section on the Woodstock Tornado below).⁴⁵

The question of municipal emergency planning after the demise of the EMB - which had been the driving force at that level - was taken up by the Regional Director of EPC and those municipal EMO's still in existence, in a series of meetings in 1975 and 1976. The Deputy Solicitor General (Ontario) had proposed that the Federal Government continue to fund the Municipal EMO's, EPC dealing with them directly. An initial 51% EPC funding in 1976 is, today, 75% for those municipalities that "opt in" to the program (an emergency planning officer's salary). There are now 27 groups of EMO's providing coordinated planning services for 80% of the population of Ontario. The "operational" officers of EPC are the Zone Coordinators who were retained after the EMB was disbanded, and who now serve as proposers and organizers of Mutual Aid programs between municipalities. Each of the six Zone Coordinators is an emergency planning officer in his own municipal area as well, and is responsible (to the municipality) for the drawing up of general emergency plans for the municipality or municipalities within his jurisdiction. In the response to a disaster, the planning officer is available to give advice to the local council. Planning officers generally have more autonomy than under the previous system where funding came from two levels of government and the EMB took on much more of the planning role. Whereas before municipalities felt that the EMB was ultimately responsible, now each municipality must "carry the can"; although the Regional Director of EPC can eliminate funding if he so chooses.

The Regional Office of EPC acts as an unofficial advisor to the provinces concerning municipal complaints. It has access to the Lead Ministry Coordinating Committee and it has served as a link between municipal planning offices and the provincial level, which, on a slightly more formal level, is also part of the role of The Association of Emergency Planners of Ontario (formed in July 1977). The association is made up of the emergency planning officers from the extant EMO's, its executive being the six Zone Coordinators: it meets once a year, and now has access to the Lead Ministry Coordinating Committee (see Fig. 1). Each member of AEPO's executive chairs a committee set up to examine a different aspect of emergency planning in the province, for the benefit of its members (see Appendix V).

5. MUNICIPAL PLANNING - THE METRO TORONTO EMERGENCY BY-LAW

At the base of all these activities, of course, is the municipal response itself. The major thrust of Regional EPC's policy is to provide "encouragement and resources" for municipal planning;⁴⁶ the emergency planning officers are concerned with the preparation of municipal planning; and it is provincial policy that the municipalities are the agents of first resort in any emergency. For this purpose, The Municipal Act, (R.S.O. 1970) allows that:

By-laws may be passed, by the councils of all municipalities,

- (ii) for the establishment and maintenance of emergency measures civil defence organizations, and
- (iii) for providing moneys for emergency measures and civil defence, for the purposes of emergency measures civil defence organizations and for the cost of the operation of such organizations, and for other similar work within the municipality.

R.S.O. 1970, c.284, s.353(b)

and it specified (until the repeal of the Emergency Measures Act) what temporary councils could be organized during a defined "emergency" (s.257(i), 258).

The municipal plans sanctioned by by-law across Ontario are quite similar in nature, due to the original guidelines - and in some cases prototype plans - issued under the EMB. Differences, of course, depend on a number of factors, including interest in (a) the planning process, (b) particular regional hazards, and (c) size of communities involved. In the regional municipality of Niagara, for instance, a full time coordinator and deputy coordinator have assisted in the production of municipal plans for 12 municipalities, plans for oil and other product spills, flood plans, and Regional plans for peacetime disasters. In other areas, the frequency of emergencies such as flood and fire (e.g. Kapuskasing and Cobalt 1978) give the local emergency plan high visibility. Flood plans, inherited from the EMB (1961), involve a local committee of representatives from the Ministries of Natural Resources, the Conservation Authorities Branch, Ontario Hydro - bodies concerned with monitoring and response. In the Regional Municipality of Durham, off-site contingency plans for evacuation of the area around the Pickering Nuclear Station have been in effect since 1974 (see section on Pickering emergency procedures below) along with flood evacuation plans.

THE METROPOLITAN TORONTO EMERGENCY BY-LAW

As the largest municipality in Ontario, Metropolitan Toronto has had a special presence in emergency planning. Metro Toronto EMO was set up (under a different name at the outset) in 1955, concerned with civil defence. In 1961, Colonel John Pollard, then vice-chairman of the new Ontario EMO, became the Chief of the Metro operation. He was responsible for setting up the Metro-wide Ambulance Service, run for a number of years through the Chief of Metro EMO.

In 1975, the disbanding of the provincial EMB and the cut-off of funding caused the disbanding of the Metro branch of EMO as well. Metro Council transferred emergency measures planning to the Metro Police Department. An emergency planning unit, headed by Pollard as Emergency Measures Coordinator, was embedded in the Department. Subject to the advice of the Police Chief, the unit's purpose was to develop an understanding of how to deal with any Metro emergency. In the absence of provincial direction or legislation, two goals were felt to be essential: first, the creation of a grouping or structure whereby the local agencies could jointly plan for emergencies, emphasis being placed on developing liaisons with the police and pinpointing available services and equipment to which the police could turn in an emergency; second, the formulation of amending and enabling legislation to put the plan into effect.

This was the immediate background to the controversy over the Emergency Planning By-law. Two years of internal committees, policy reviews, etcetera, resulted in the presentation of a new Emergency Plan before Metro Council on April 24, 1979. The plan had been forwarded to Council by the Metro Board of Commissioners of Police through the Legislation and Licensing Committee. Accompanying the plan was a recommendation that Metro Council seek provincial legislation, amending the Municipality of Metropolitan Toronto Act, which would allow Council - among other things -

1. to establish a formal plan of operation in emergency situations;
2. authorize the Metropolitan Chairman or in his absence another designated official to declare ... an emergency situation;
3. delegate certain or all of its powers to a Committee of Council, the Chief of Police, the Emergency Planning Advisory Board (or others);
4. authorize the police and municipal personnel to enter upon private property without the consent of the owner in a declared situation of emergency;
5. seek a statutory provision prohibiting any legal action for damages or personal injury to any person ... in the performance of duties ... conferred pursuant to the legislation.⁴⁷

Council (on April 24) first struck out and referred the exemption for liability clause back to the Committee. It then went on to the heart of the matter, the ground-rule under which these emergency powers would come into effect, most especially the clause concerning the declaration of an "emergency".

The original draft read:

1.3 "emergency" means:

- (a) an emergency proclaimed as such under the War Measures Act (Canada);
- (b) an emergency proclaimed as such by the Metropolitan Chairman;
- (c) a natural disaster or other situation of crisis affecting the Metropolitan Area recognized as an emergency by the Chief of Police; or
- (d) an emergency proclaimed as such by the Province of Ontario or pursuant to any Act of the Ontario Legislature.⁴⁸

Amendments were proposed by Alderman Sparrow deleting (a) and (b) and amending (c) to leave the declaration of an emergency in the hands of the Metropolitan Chairman. He also proposed that authority and responsibility for Emergency Planning be taken away from the proposed Emergency Planning Advisory Committee and invested instead in members of the Metro Executive Committee, the Emergency Planning Advisory Committee acting under its authority. This would eliminate what was seen as possibly excessive powers being granted to the police or other non-elected officials.⁴⁹

These matters were referred back to the Legislation and Licensing Committee, who reported back for consideration on June 19th. In the meantime, strong representations had been made against the proposed by-law, most notably by Ms. Maryka Omatsu and Ms. Edy Goto representing the Japanese-Canadian community. In a brief submitted to the Legislation and Licensing Committee they said:

While in 1914 the War Measures Act was passed to coordinate government activities during national emergencies, its application in 1942 saw 20,000 Japanese-Canadians ... stripped of the rights we consider basic, separated from their families, forcibly relocated and sometimes deported, (and) put into concentration camps.⁵⁰

Ms. Goto added that young Japanese-Canadians like herself were not satisfied that the proposed legislation was free from possible later misinterpretation or abuse.⁵¹

The Committee Chairman, Mr. Sheppard, agreed, maintaining that civil rights could be jeopardized if the plan was implemented in anything but a natural emergency. The Metropolitan Solicitor, in his remarks to Council, submitted that the definition of an emergency should

be all-inclusive in order to permit flexibility in the making of a decision to put an emergency plan into effect, and to provide legal protection to those acting under the authority of the by-law.⁵²

The Metro Chairman - who would declare an emergency under the by-law - wanted the definition to be broad enough to cover deliberate acts like "the contamination of Metro's water system".⁵³

The furore over the first presentation of the by-law seems to have had little effect on the Legislation and Licensing Committee, which re-endorsed substantially the same proposal, except for clarifications of the proposed declaration of emergencies, consisting of recitals of the circumstances of proclamation, time-limits, and more public information. The effect of this re-endorsement was staggering. In the lead-up to the presentation of the by-law to the Metro Executive (scheduled for February 5, 1980), at least 36 civil rights groups, labour organizations, and individuals asked formal permission to speak against the by-law. The major Toronto newspapers published severely critical editorials, such as:

The proposed by-law would set up a committee headed by the Metro Police Chief to formulate and implement emergency plans, and it would empower the Metro Chairman, the Executive Committee, or Metro Council to declare a state of emergency... Such powers would make it possible for unscrupulous politicians or top police officials to suppress strikes and political demonstrations, to stifle freedoms of speech and assembly, and to immobilize those attempting to bring out legitimate social change. (Toronto Star, February 1, 1980).

Unfortunately for the other side in the argument, the Emergency Plan, which would be implemented by the by-law, contained this phrase in the introduction:

Planning for emergencies, real or apprehended, must for these times particularly relate to social unrest, subversive activity, organized illegal activism and the threats these pose to the daily security and welfare of our citizens.⁵⁴

These remarks and others were cited by Alderman Sparrow and others in their opposition to the by-law. It was of little use that the Metro Solicitor complained that

the declaration of an "emergency" is for the purpose of the by-law only... It is simply a mechanism by which a civil authority may signal the various agencies concerned to act in a coordinated manner in accordance with pre-arranged plans; within the existing limits of their statutory powers.⁵⁵

The by-law was once again shelved.

In April 1980, a new draft proposal was put forward, eliminating the word "emergency" and replacing it with "disaster". Entry without warrant, control of access to sites, and the power to declare an emergency were all dropped from the by-law. Furthermore the Metro Chairman announced that plans to press the Province for new enabling legislation would be dropped. The Chairman noted:

We've never wanted to enhance our powers. We've always said we just want a by-law that allows us to coordinate our manpower and services in the event of a disaster. Somehow the earlier attempts got off the rails and people were really concerned about our plans. (Toronto Star, April 11, 1980).

At the time of writing, the by-law has yet to be passed.

This event has been described at some length to underscore two points. First, the whole exercise depended on the vacuum of provincial legislation. Indeed, it was an unspoken assumption that the by-law was to be the first step in attempting to get new legislation out of the Province, since the municipalities have no more power than that given to them by the provinces. Had the original by-law been passed, it was quite likely that the Province would not have gone on to give Toronto the powers it requested.

Second, approximately two years of time was spent in wrangling over the question of the definition of an "emergency". That neither the Metro Solicitor nor the Police Advisory Board anticipated the public reaction (or at least the depth of it), says some rather disturbing things about the assumptions under which the planning effort operates. Most pertinently, there is the assumption that public input is unnecessary except at what is practically the ratification stage.

6. MUNICIPAL PLANNING AND RESPONSE - THE TEXACO FIRE

As outlined above, municipal emergency planning and procedures vary around the province, dependent on local interests or conditions, but usually based on a skeleton plan derived from EPC or the old EMB network. As the parties of first resort, it is usually the case that the police or the fire department provide the focal point for the proper use of services and equipment, with the local politicians serving in advisory or supervisory capacities. It is, therefore, very often the case that an emergency is well under control before any thought is given to the formation of emergency committees or the implementation of the emergency "plan". Of course, the prevailing uncertainty as to the ground-rules of declaration assists in this. Even before the repeal of the Emergency Measures Act, this was a problem of some magnitude. A 1973 Cabinet submission reported:

While the "emergency" defined in the Act means either a war, invasion, or insurrection proclaimed to exist under the War Measures Act, or a natural emergency declared to exist under the Emergency Measures Act itself, municipalities have found themselves implementing their procedures in response to the demands of actual emergencies, whether or not these emergencies fit within the definition of the Act, and without these emergencies ever having been formally declared as such by the Provincial Government. ⁵⁶

The converse is also true: municipalities implement emergency procedures without considering (or wishing to consider) the situation to be one that constitutes an emergency or requires the implementation of the emergency plan.

These and other aspects of the relationship between municipal emergency response and the official "plans" were illuminated in a case study of the Texaco fire in Port Credit (1978) by Susan B. Hazen, summarized below.

THE TEXACO FIRE

The Texaco fire began, as a result of arson, at 1:00 a.m. on the morning of October 2, 1978, and resulted in eventual damage costs of over \$2.7 million dollars. A storage tank and 1.3 million gallons of oil were destroyed; and although the fire was confined to the Texaco site, the blaze, fueled by the oil, threatened the surrounding residential area, necessitating the evacuation of over a thousand people.

The original emergency response was made by the company itself, which has an elaborate alarm mechanism and call-up procedure, as well as mutual-aid agreements with neighbouring oil companies and foam-supply companies. In response to the fire, forty-two Texaco personnel and sixty others worked to contain the blaze. The gradual build-up over the years of residential property in what had been industrial land had not, it appears, been matched by the emergency procedures of the company *vis à vis* those of public agencies. The Mississauga Fire Department was not included in the Texaco alert procedure, and had to be alerted by members of the public half an hour after the fire began. Nor had the private response been made part of the Peacetime Emergency Plan of the Regional Municipality of Peel (drawn up five years earlier).

Whether private agencies should be included in such an emergency plan (many emergency plans do not include them) was a moot point in this case, however, since the Peacetime Emergency Plan was not invoked. The Mississauga Fire Department proceeded - over and above their standard operating procedures - to improvise as the situation deteriorated. They followed the lead of the Texaco personnel, recognizing their expertise and their on-site responsibilities; they obtained foam trucks from Toronto International Airport and Canadian Forces Base Downsview by unwritten mutual-aid agreement; they

took a lead role in co-ordinating themselves and Texaco personnel to protect the lives and property of nearby residents ⁵⁷

outside the plant. The police officer on-scene responsible for the co-ordination of police activities

activated certain emergency procedures; e.g. calling ambulance services, setting up roadblocks, evacuating endangered persons and... he directed calls to the Board of Education to open

Riverside School, to the Peel Parks and Recreation Department to open the Port Credit Arena and to the Library Board to open the Library for emergency housing and shelter.⁵⁸

Contacted by the police, the Red Cross operated under their own emergency procedures for assisting at evacuation centres, and, even though the police did not know how many personnel were on scene from the Red Cross or where, things worked smoothly. The Fire Department and the Police Departments said that the fire was handled in the most expedient and effective way possible. Evacuation was completed three hours after the fire began, and the fire itself - a complex problem involving a number of systems failures - was extinguished by 12:00 noon the same day.

In short,

Looking back on the Texaco fire, it becomes obvious that without the implementation of the plan an emergency was handled in reasonable time with ample manpower and in a co-ordinated, well-structured fashion.⁵⁹

Police and Fire Department officials were reported to have said that implementation of the plan would not have shortened the reaction time of the responsible agencies, and might even have lengthened it: for instance, if appeal for assistance from a Federal agency (CFB Downsview) had had to go through the Emergency Operations Control Group for approval - as stipulated in the plan - valuable time would have been wasted. Reluctance to implement the plan was also voiced by officials who considered that public anxiety would have been needlessly created by the word "emergency". Ironically, the very implementation of a plan designed to reduce anxiety would create it!

The Hazen study concluded that, since the conditions for implementation of the emergency plan had been met three times without the plan having been implemented (the Texaco Fire, the DC-9 crash at Malton Airport, and the snowstorms of 1976-77 being cited), it was necessary to stress instead

a closer co-ordination of the individual plans of municipal response agencies.⁶⁰

It has been said, quite fairly, that the creation of municipal emergency plans is fundamentally a "learning experience"; that the planning process itself reveals the weaknesses and gaps in the response structure; that the planning process lets everyone know "where they stand"; and that the best reason for having a plan is often to facilitate intergovernmental discussion and provide legal guarantees of protection from liability. By this argument, then, emergency plans merely articulate what will be done in any case. And it is surely true that a good plan is one that streamlines natural responses and channels them in productive directions.

There are two problems connected with this, however. First, in an emergency of great magnitude or long duration or high visibility, the emergency plan may well be invoked. When this happens, a plan that has been on the shelf may become the hard-and-fast guidelines of the elected officials who are now responsible for the direction of the crisis. This can result in a period of confusion during the transition. More seriously, the non-invocation of a plan - "it just sat there on the shelf" - may cause the whole notion of an emergency plan to become downgraded. The second, related, problem is that an unexercised plan is virtually useless, and becomes systematically more useless as time passes: when a real emergency comes, unexercised plans do just sit on shelves. Upgrading and updating of municipal plans are essential activities, if the initial "learning experience" is not to be dissipated. This is, now, the function of the emergency planning officers in each municipality.

Standardized training of emergency planning officers, the maintaining of qualified personnel, the promotion of carefully planned simulated exercises, all of which form the basis of an adequate program for the promotion of emergency planning, are supported only by the federal government. The provincial government as recently as this year recognized in a Cabinet memo that

In an emergency situation it is the prime responsibility of the municipal council to act.⁶¹

Yet there is now no support given to the municipalities of Ontario for emergency planning from the Ontario government. The recent addition to the Lead Ministry Co-ordinating

Committee of the AEPO and the work of Regional EPC as liaison may alleviate the communications problems somewhat, but the lack of a provincial policy of funding and encouragement must lead inevitably to situations like that of officials at the Ministry of Health who were (Nov. 1977) amazed to learn that so many municipal EMO's still existed.⁶² Furthermore, unofficial and amateur assistance - often ignored by provincial ministries - may occasionally be the greatest source of men and material at the municipal level, and there is now no official encouragement given to these bodies.

As we shall see when we come to analyse the Mississauga Train Derailment - which took place in Peel Region a year after the Texaco Fire - one of the reasons for the smooth working of the emergency response teams is the constant practice in emergency procedures which Peel Region undergoes simply by virtue of being adjacent to Malton Airport. The Fire Department, for example, is on emergency alert nearly every day due to problems at the Airport; and by necessity, not official encouragement or funding, evacuation techniques and alert mechanisms have been extensively tested. Not many parts of the province may have such visible need for emergency plans; however, it is the lack of constant exercise which makes the considerations outlined in the paragraphs above so vital, since it is support for training and updating which must take the place of high rates of implementation.

7. MUNICIPAL-PROVINCIAL PLANNING AND RESPONSE - THE NORTH YORK GASOLINE LEAK

The lack of support for the municipalities is exacerbated by the fact that there is no real interaction in the planning efforts between the province and the municipalities. As we have seen, the province plans on a ministry-by-ministry basis, and carves up authority in the same way. This adds to the already existing confusion about declarations of "emergency" or "disaster areas". A recent meeting between municipal EMO officers and the Solicitor General pointed out both these problems. First,

The importance of clarifying declarations of disasters and emergencies was stressed... Reference was made to the Ontario Disaster Assistance Relief program of TEIGA, which places the onus on the Province to declare the area a "disaster area" before costs become sharable.⁶³

The Municipal EMO's also made reference to the fact that

there was confusion over which particular ministry co-ordinates provincial response.⁶⁴

i.e., the "Lead Ministries" concept is little understood at the municipal level.

This confusion is occasionally reciprocated. The Cabinet memo cited earlier, noting that in an emergency it was the responsibility of the municipal council to act, was quoted by the head of the Control Group for the Ministry of Labour's contingency plan dealing with nuclear accidents, during testimony before the Ontario Legislature's Select Committee Hearings on Ontario Hydro (April 27, 1979). The spectre of municipal responsibility for nuclear disaster was too much for some members of the Committee, and they objected strongly. This prompted the reply:

Of course, the statement there is a general one applying to emergencies of all kinds and I was quoting from the Minister of Intergovernmental Affairs who made a general statement to that effect. I believe there is legislation as well, but certainly there is legislation authorizing those things (*sic*).⁶⁵

The only applicable legislation is the Municipal Act, and as we saw in the case of Metropolitan Toronto, the extent of that applicability is certainly not enough at present to warrant the remarks made before the Committee.

As a result of this confusion on both levels, situations may arise where friction between municipal and provincial response agencies as to the jurisdictional powers each has can hamper emergency measures. An example of such friction occurred in the North York Gasoline Leak of February 21, 1979.

THE NORTH YORK GASOLINE LEAK⁶⁶

The leak occurred between 5:00 and 6:00 in the morning on the premises of Imperial Oil on Finch Avenue West in North York. Due to improper installation of a drainage and by-pass system, a gasoline spill of between 800 and 2,000 gallons near a loading bay made its way into the sewer system, and eventually emptied into Dufferin Creek. Fumes from the gasoline began percolating up into the businesses and factories in the industrial area, and at about 8:00 a.m. the North York Fire Department and Consumers' Gas began receiving telephone calls complaining of gas leakage. In the meantime, Imperial Oil officials, unaware of the improper drainage system, proceeded in the mopping up of what they believed to be an internal spill.

An hour later, at 9:15 a.m., the Fire Department arrived at Imperial Oil, having been checking possible sources of the leak in the area. An Imperial Oil official went down to Dufferin Creek accompanied by a Fire Department official. They discovered raw gasoline entering the creek from the main storm sewer outflow. Realizing that the spill had somehow gone off-site, Imperial Oil now contacted - as required - the North York Public Works Department, the provincial Ministry of the Environment, Imperial Oil headquarters, and the Ministry of Consumer and Commercial Relations (Energy Safety Branch).

Meanwhile, the Metropolitan Toronto Police, originally brought in to help with traffic control, had begun initiating evacuation procedures and setting up an emergency command post, as outlined in the Metro Police manual. This series of procedures has been developed over the years, and is now standard for many of the police emergencies around the province. In essence, the Police plan calls for the isolation of the emergency

area (where possible) behind a cordon. This cordon is controlled through various access points, and separates the emergency response teams from the public. In addition, a serious emergency may necessitate the setting up of a command post adjacent to the cordoned-off area. The command centre acts as the centre of communications, press liaison, et cetera.

In this case, the command centre was set up in a nearby factory parking lot, and it was from there that the evacuation of the surrounding area was ordered and monitored. As we shall see in dealing with the Mississauga Train Derailment, the general conception of a cordoned-off area containing a designated command centre was at the heart of that response; though in that case the scale of activity was much larger.

Consultations among the participants, especially the North York Public Works Department and the Fire Department, led to the consideration of methods of flushing the gasoline down and out of the sewer system towards the booms now being set out across Dufferin Creek by Imperial Oil technicians. At this point a representative from the Ministry of the Environment appeared on the scene (10:15 a.m.). He initially tried to persuade the Works Department personnel not to flush the sewers; it appears because he wanted them to wait until downstream booms were in place. The efficacy of washing out the gasoline from the sewer system in alleviating the problem was also called into question.

Whatever the reason, the MOE official then told Public Works personnel that he would have them arrested if they proceeded. At this point the Deputy Fire Chief - who was at the scene - asked the official if MOE was invoking the "lead agency" principle, and was he therefore taking charge of the operations. The MOE official replied that he wasn't, and flushing of the sewers proceeded. Police later remarked that any attempt to have North York Public Works officials arrested would have instead resulted in the expulsion of the Ministry official.

The MOE official involved has denied strenuously both any attempt to take over the running of the emergency response and threatening Public Works personnel. Nevertheless, all three municipal agencies involved, Police, Fire, and Public Works, believe that that was in fact what occurred. Whatever the merits of the case, or the possible time spent in sorting out jurisdiction, it is clear that a great deal of friction was caused.

After this incident, evacuation of the area continued, tracing the path of the fumes through the industrial zone and out into partly residential housing beyond. Between four and five thousand people were eventually moved out until after 4:00 p.m., when the emergency was over but for the mopping-up operations.

Two points may be made here. The first, and most obvious, is that in a sizeable centre such as Toronto, or many other municipalities in Ontario, the involvement of provincial ministries in municipal actions may be a source of friction. Most ministries (including the Ministry of the Environment) recognize this, and normally attempt to be on-scene as much as possible in a purely support capacity.

Second, the lack of municipal-provincial co-ordination is highlighted by one interesting facet of this particular emergency. Imperial Oil is required to contact the Ministry of the Environment and the Ministry of Consumer and Commercial Relations (Energy Safety Branch) in the event of an off-site spill. In this case Imperial Oil did not perceive this as an off-site spill until after the arrival of the Fire Department. Although it is not clear what time Imperial Oil contacted the Energy Safety Branch of the Ministry of Consumer and Commercial Relations (that is, before or after the arrival of the Fire Department), Imperial Oil is required to contact them concerning any boiler or valve failures (as occurred in this case). If a simple log system were in place at the Energy Safety Branch, and Imperial Oil reported such an incident to them, the Fire Department might not need to spend an hour trying to locate anyone who might have had a spill. A single phone call to the Energy Safety Branch would suffice. Such a system, and ideas for similar situations, necessitate municipal-provincial contacts on a continuing basis.

If one returns to the first problem raised by this discussion again, namely, the introduction of provincial ministries into municipal emergency situations, a critique may be launched against one aspect of the "Lead Ministry" framework as set out in policy documents. This aspect is the initial emergency alerting system, ideally expected to channel requests for lead ministry action through the O.P.P. to the appropriate ministry. It is possible to argue that this communications model is really designed for

sudden devastating emergencies requiring immediate support or provincial equipment. The North York Gasoline Leak and the Oakville Pesticides Fire (discussed in the next section) are examples of emergencies that built up slowly or only revealed their true potential severity after some lower-level effort was firmly in place. It may be asked: first, how relevant is a provincial "designation"; and, second, in an emergency that changes its characteristics swiftly, how much power has a junior-ranking provincial official (often the only such official on scene) to take charge of an emergency? Since there has been no planning in liaison for the transfer of power, the consolidation of communications, and the commanding of equipment, and since there have been no practice exercises to sort out these questions, the answers remain somewhat obscure.

8. MUNICIPAL-PROVINCIAL PLANNING AND RESPONSE - THE OAKVILLE PESTICIDES FIRE⁶⁷

Outside of the Lead Ministry program provincial ministries often find themselves working together; it may be in areas of undefined or unexpected responsibilities, or it may be in situations like those described in the previous section, where more than one ministry is on the scene of a municipal emergency. It is the second situation that is described in the third case study.

The Oakville Pesticides fire began at 1:00 p.m. on the afternoon of April 25, 1978 in the Oakville Forwarder's Warehouse, a storage warehouse for industrial chemicals, fertilizers, insecticides, and paint. The fire was fueled by these inflammable materials, and when the Oakville Fire Department arrived they found themselves almost immediately confronted by an intense and unstoppable blaze, to which was added a bombardment of igniting aerosol cans. Under the Halton Municipal Aid agreement, personnel and equipment came from Burlington Fire Department to assist. (The Halton Regional Emergency Plan was not declared in force.) The Ministry of Labour sent a representative to the scene. The Ministry of the Environment sent its monitoring truck - which was in the region that day - with a four-man team. It spent the day collecting air samples for laboratory tests.

Because of the intense heat most of the chemicals were vaporized or funneled up high into the atmosphere, but an acrid smoke caused breathing problems for the firemen and policemen in the area. The fire continued for most of the day, causing the closure of sections of the QEW and slowdowns in GO train service through the area. By 8:00 p.m. the fire was under control. MOE remained on site monitoring, and officials agreed to meet the next day to consider what problems might arise from the smouldering chemical "stew".

The next morning, the smouldering fire had produced a low-lying cloud of toxic fumes which began to spread downwind of the Warehouse. Ministry of the Environment officials suggested that there should be an evacuation of the area. As the Fire Department was only concerned with the blaze, they would not take responsibility for ordering an evacuation once the blaze was out. The Ministry of Labour, whose representative had not returned the second day, had the power to declare an evacuation but was not available. The Ministry of the Environment then contacted the Ministry of Health, who also have the power to call for an evacuation, but only through the Local Medical Officer. He was unable to be located. Through the rest of the morning, and until three in the afternoon, executives of various companies in the area attempted to discover whether or not an evacuation was in force, and received conflicting reports from the radio and from the Ministries. At three in the afternoon the Local Medical Officer was located, and he advised - did not order - an evacuation. It had been obvious for hours that such a step was needed, with people in offices choking and nauseous, and numbers of them reporting to Oakville-Trafalgar Memorial Hospital during the day.

For its part, the Ministry of the Environment did not consider itself to be the "Lead Ministry", even though under The Environmental Protection Act and The Pesticides Act it has broad powers to cover emissions and contaminations. A fire had never been considered an emission, a "release" reportable under the EPA Act. MOE have revised their procedures in light of the incident and are working with Halton Region on a revision of their plan. In an interview, members of MOE commented that the Emergency Plan might well have been implemented, if only to ensure that the Local Medical Officer would have been on scene as part of the Regional Health Unit.

This example repeats with alterations an aspect of the emergency planning picture touched on before: inter-ministerial planning and participation may work well, if only because it is the same level of government talking to itself; however, when the municipalities become involved, the resulting "triangle" may not work so well. In this case the attempt to obtain authorization for evacuation was complicated by having to shift back and forth between levels of government; and, even more seriously, (as discussed in the North York Gasoline Leak case study,) it is the personnel on the scene who have to make the hard decisions in concert with municipal authorities. The lack of a single spokesman or declaration procedure was a serious concern and has been rectified - at least in this type of incident.

Two major emergencies in the fall and winter of 1979 involved most of the provincial emergency response agencies; and in terms of time, space, and commitment of resources, may be said to have provided the largest full-scale test of the capacity of emergency procedures since the introduction of the "Lead Ministry" concept. These emergencies were the Woodstock Tornado in August and the Mississauga Train Derailment in November. The scale of these two emergencies and the number of agencies involved was so great that a more detailed exposition and analysis of the events is warranted, and has been followed below.

9. MUNICIPAL-PROVINCIAL PLANNING AND RESPONSE - THE WOODSTOCK TORNADO^{6 8}

The tornado activity which struck Woodstock, Ontario and parts of Oxford, Perth, Brant, and Haldimand-Norfolk Counties between 6:00 and 8:00 p.m. on August 7, 1979 was the tail-end of a day of severe weather in much of Southern Ontario. A warm front and a subsequent cold front passed through, both accompanied by severe thunderstorms and tornado sightings. The cold front spawned two tornadoes, which touched down, creating three damage tracks (from three funnels).

Between 6:18 and 6:56 p.m. one tornado cut a swath beginning southeast of Stratford in Perth County and proceeded east in a saucer-shaped curve until it left the ground east of Bright. Crops and property were extensively damaged. Four minutes before, at 6:52, another tornado funnel came down northwest of the city of Woodstock and moved through the southwest corner of the city - destroying or damaging over 350 buildings in the process. It proceeded southeast in an almost straight line (adding another tornado funnel as it went along) through Oxford County, Brant County, and Haldimand-Norfolk. The communities of Oxford Centre, New Durham, Kelvin, Vanessa, and Waterford were in the path, and were either flattened or damaged. This second tornado system left the ground southeast of Waterford at 7:58 p.m., in the midst of a violent hailstorm. Travelling at a constant speed of 50 km/h with a rotational velocity of over 150 km/h, the three funnels caused, in less than two hours, two deaths, widespread property and crop damage (20 million dollars' worth at least), and extensive electric and communication network outages.

Analysis of the emergency response naturally divides itself into three rough categories: the warning or initiatory phase; the immediate response or "emergency" proper; and the medium or long-term clean-up and restoration. Even more roughly, each category is characterized by relations between the "ins" and the "outs" - internal local communities, organizations, agencies, politicians; as opposed to communities, organizations, et cetera, who are either outside the area or who have other, perhaps more general, commitments which must also be looked after. In this event the pattern is shaped something like an hourglass: the warning phase concerns a federal agency (the Ontario Weather Centre) and the channeling of warnings to a localized area in southwestern Ontario; the immediate response focuses on the local emergency services; and the recovery and restoration depends for the most part on external assistance, based on local requests and organizations but monitored and supported by the provincial government.

THE WARNING PHASE

The small - though significant - frequency of tornadoes in this part of Ontario (Oxford County can expect one approximately every twenty years) makes it difficult for the modification of buildings, for example, to be given a high priority; and similar problems exist in attempting to set up specific emergency plans or responses dealing with tornadoes. Heavy reliance on a good, fast warning system is therefore indicated. Unfortunately, tornadoes are extremely difficult to spot or predict in the present state of meteorological knowledge. In most cases it is hard to separate tornadoes on radar from the "noise" of a severe storm centre. The sighting of a distinct radar echo hook is probably less effective, in any case, than eyewitness reports of sightings. Unlike the U. S., however, which has a vastly larger number of tornado events annually, eyewitness networks in Canada are rudimentary or haphazard. (This is being changed at the time of writing.)

This being so, the warning system promoted by Atmospheric Environment Service's Ontario Weather Centre is quite conservative in its warnings, since prevention of the "Cry Wolf" syndrome is very much on meteorologists' minds. This is commendable; nevertheless, it is tied to a system of calm public messages which the public, by and large, ignores or misinterprets. The Centre issues watches and warnings, a severe weather or tornado watch indicating that the event is a possibility, and a warning indicating that the event now exists. (In the case of a tornado warning, a radar hook or a sighting must be present before a warning is issued.) On August 7, the 3:30 forecast indicating thunderstorms was followed by a severe weather watch at 3:40 p.m. As conditions worsened, local weather watches were issued (at 6:15 and 7:15 p.m.) for all the counties which were, at that very time, in the middle of a tornado emergency. At no time did echo hooks appear on the radar. Nor was the possibility of tornadoes mentioned in any of the watches.

The dissemination of watches and warnings from the forecasters is by telecommunications to other regional weather offices, news services, OPP, Ontario Hydro, and others, who supply the information to those who request it. AES also has a Weatheradio system, which broadcasts out in a 60-mile radius of Toronto; i.e., not including the Woodstock area. The key public warning services, radio and television, depend on Broadcast News,

a commercial distribution service, for their information. They then decide whether or not to air this information. In other words, apart from the OPP and Ontario Hydro (who buy the telecommunications), the entire system is commercial and voluntary.

Broadcast News distributed the 3:40 watch; it claims never to have received the subsequent watches, and the local stations appear to have broadcast nothing further (if even that). The receipt of the information by the OPP and Ontario Hydro seems to have been equally haphazard. An Ontario Hydro employee phoned the Ontario Weather Centre in the middle of the emergency to ask why the poles were falling down. Staff then tried to contact the area by telephone, but communications by then were severely disrupted. The area had thus had no real warning of the tornado onset.

THE IMMEDIATE RESPONSE

After the tornado there were three priority tasks: i) rescuing the injured and locating possible dead; ii) restoring the power and communications in the area; iii) assisting the displaced and dispossessed victims.

The first of these tasks was performed by the local police (i.e. Woodstock Police Department) and the Ontario Provincial Police (OPP), who followed the damage tracks looking for people trapped in the wreckage of their homes. Telephone communication having been disrupted, OPP radio systems became the primary communication network for the routing of emergency vehicles and the securing of the area. However, one problem arose immediately. Emergency agencies were not tied into the OPP network. Woodstock General Hospital, for example, which has the OPP network antenna perched atop its main building, is not patched into the network. A relay system from ambulances to police cars to police headquarters to Woodstock General (via a direct line) had to be improvised. The hospital operated blind for some time; at one point a false rumour of massive casualties at a factory triggered a set of new and unnecessary preparations.

The accounting for dead and injured was completed within approximately two to three hours. After that, Woodstock and Ontario Provincial Police sought to prevent looting and set up a mobile headquarters in the affected area. The Fire Department assisted in clearing roads and investigating reports of natural gas and propane leaks in the area. Traffic jams of interested spectators began almost immediately, and traffic control became a major police concern for the next week. For the staff at the hospital, most of whom reported for duty on their own, emergency telephone "fan-out" procedure was not implemented (phone service being disrupted). The night was relatively easy, as only two of the 187 individuals who arrived were dead on arrival, and only six were seriously injured. The local ambulance service was able to handle the inflow.

The second priority, restoring power and communications in the area, was met by Ontario Hydro, the local Public Utilities Commission (PUC), and Bell Telephone. It has been estimated that 60% of Woodstock's electricity supplies were cut, with rural consumers faring even worse. Twenty-nine transmission towers were destroyed in the tornado, and Ontario Hydro's first task was to reroute electricity through the Hydro network. Within two hours of the first outages, a central control emergency response group was set up in Toronto, with a smaller group in the Western Region headquarters in London, Ontario. Transmission stations had normal power restored by 2:08 a.m., August 8. In the meantime, maintenance and operation crews were sent out to assess the damage and set up temporary distribution lines. The Woodstock PUC was responsible for dealing with low voltage lines disruption. Priority was given to restoring power first to the Police Station, and then to water supply pumping stations and sewage lift stations. Bell Canada seems to have restored most of the damaged telephone network within twelve hours, although the long-distance Toronto-Windsor cable was out for two days.

The third priority, assisting the displaced and dispossessed victims, was carried out at this stage mostly by the Red Cross, which set up a registration and inquiry service.

On the political level, response at the municipal level was different in all three jurisdictions through which the tornado passed. Senior officials of the City of Woodstock, which has no emergency plan, put themselves into the hands of the Police and the Red Cross for the evening. The Mayor spent this period going between the police station and the Red Cross Headquarters nearby, acting as impromptu liaison officer. In Burford Township in Brant County, the Clerk became the Chief Administrative Officer for the co-ordination of local relief. Burford Township has a disaster plan and avails itself of the services of an Emergency Planning Officer in Brantford. The Clerk contacted the

Emergency Planning Officer (who offered communications support) and then initiated calls to various politicians, including the local MPP. He also appears to have been the first to request Disaster Relief Assistance.

In Haldimand-Norfolk, which also has an emergency plan and Emergency Planning Officer, the Emergency Planning Officer's role was as part of the "fan-out" procedure. As with the other areas, the immediate municipal response was related to assisting regional and local police.

THE RECOVERY AND RESTORATION

The restoration of normal services to the community and the provision of assistance to the dispossessed became the medium and long-term priorities of the response agencies. At this time, support and the generation of support from outside sources began to become a central issue in the area.

Early in the morning of August 8, repairs to the high-voltage and low-voltage distribution and transmission lines in the area were begun on a large scale, with two hundred men dispatched from Toronto, Pickering, London, Beachville, and Woodbridge working every daylight hour to restore power. Hydro and the PUC were able to restore power to all their rural and city customers by August 12.

One of the major problems of the disruption of electrical power was the loss of control over Woodstock water supply. While Woodstock Public Works and others, including PUC crews from nearby Ingersoll, had restored power at the sewage disposal plant and the sewage lift stations by 7:00 a.m. on August 8, the loss of electricity cut off water supplies pumped from wells outside the city. Two wells inside the city and the city reservoir still remained on line, but the wells provide low-quality water and the reservoir was only partially filled. The PUC's emergency plan outlines procedures for calling in assistance from regional Hydro; but, unfortunately, the senior personnel with access to the plan were away on holiday, and it was not until 6:00 a.m. Wednesday that the accountant now in charge began contacting regional personnel.

Crews from surrounding areas converged on Woodstock and the wells near Sweaburg, outside the city to the south. The PUC official appealed on the radio for conservation of water by city residents and local industries. City residents immediately increased their water supply by filling bathtubs, et cetera. By 3:00 p.m. the PUC was forced to advise voluntary closure of industries, and also disconnected the city reservoir in order to maintain water for possible fire-fighting. Ontario Hydro and the PUC were now working in close contact, and the London Regional office obtained a 500 KV generator for the outer wells, which functioned until power was restored at 10:00 p.m. Normal water supplies were available by the next morning, August 9.

Bell Telephone continued its efforts to restore telephone services, directing its efforts from a storm centre and supplying materials from Brantford. Reconstruction of the phone system demanded co-ordination with Ontario Hydro and PUC crews. Use of existing lines had nearly doubled, and CB and ham radio operators were constantly at work throughout this period.

The Red Cross and other volunteer agencies began sending out personnel on Wednesday with blankets and food, both for bulk distribution to affected families and for support feeding outlets for the emergency crews. Because of their registration service, inquiries to the Red Cross became a major problem, partly solved through the use of the amateur radio groups. An emergency accommodation list was compiled, but due to inadequate administration at City Hall the Housing Department was unprepared to use this information (according to Red Cross spokesmen). Outside the city the rural townships organized food relief. Burford, for instance, became a centre for feeding emergency crews from all over the affected area.

After August 8, OPP involvement in the response was directed by supervisory officers who arrived from Toronto. Fifty personnel, including auxiliary regional officers, were also brought in to assist. Restriction of access, investigation of affected areas, and regulation of traffic were continuing responsibilities over the next few weeks.

It was after midnight August 7 that the first higher level provincial involvement began. A meeting between the Solicitor-General, the Honourable Roy McMurtry, and the Minister of Intergovernmental Affairs, the Honourable Thomas Wells, resulted in the Ministry of Intergovernmental Affairs (MIA) being designated the "Lead Ministry". This designation seems

to have been based on the view that as the tornado had crossed through several jurisdictions, and as the relief effort would probably be substantial, MIA would be the appropriate "Lead Ministry". (See Figure 2 and the section on Lead Ministries, above.)

Cabinet declared the area a "disaster area" the next day and approved the setting up of the matching funding mechanism. The Technical Co-ordinator, Mr. Fred Hamblin of MIA, had direct access to Cabinet through his minister. Hamblin immediately proceeded to the area, and after holding a meeting with all the local Heads-of-Council on August 9, he set up an Intergovernmental Affairs Co-ordination Headquarters in Woodstock on August 13.

[This headquarters monitored two newly formed committees. One was made up of Heads-of-Council and civil servants from various Ontario ministries, including Agriculture, Health, Housing, and others, to process requests for assistance. The second committee was a Disaster Relief Committee, also chaired by Hamblin. This committee, made up of two citizens from each of the cities/townships involved, was responsible for raising the monies which would be matched by the Ontario government (set by an Order-in-Council at three to one) and for the appraisal and disbursement of claims. It was the negotiations and raising of funds which followed that took up most of the effort of the local political figures. In the end the Committee raised approximately 3.5 million dollars, which, when matched by the province, came to 14 million. Due to the criteria for the matching of funds, such as counting costs covered by insurance as ineligible, claims with insurance companies and others had to be settled to the extent possible before disbursements could begin. By November, 1979, when no monies had yet been paid out, complaints began to multiply about the funding system. By January, 1980, however, processing was well underway, with 5 million dollars paid.

This was a major provincial effort in the emergency. Other provincial ministries, such as the Ministry of Agriculture and Food (MAF), provided assistance. Although the bulk of the restoration work was done by local farmers assisting each other, farm organizations - with Feed and Grain Assistance Programs - and the Mennonite Disaster Relief Committee, the Ministry of Agriculture and Food did offer both information and financial assistance in the form of a low interest rate program.

The Ministry of Housing (MOH) was prepared to provide temporary housing and assistance under the Rent Supplement Program, but only one family moved into an OHC unit. Local officials were unsatisfied with the length of time it took to procure temporary housing from MOH, and trailers were generously supplied by outside organizations to a number of affected families, pre-empting the MOH offers.

Specific criticisms can be made about the response in each of the three disaster phases. The warning system is clearly inadequate. The lack of funding for a major overhaul of the system is probably at the heart of the issue, although a strong case could be made for at least a re-design of the watch-warning format for the sake of the layman user.

It is difficult, without much further research, to determine if the lack of an emergency plan hindered the City of Woodstock response. There seems to have been confusion at times, but, as we have seen, that is natural in these events. What does seem obvious is that the exercise of emergency planning in the presence of someone specifically designated to concern himself with emergency planning would have revealed the lack of auxiliary generators and the possibility of communication breakdowns.

In addition, it is worth noting that interviews with both city and rural personnel suggest that the rural communities, who, after all, received the greater part of the damage, were in much closer touch with the relief efforts, and were reluctant to accept outside assistance, unless it was on their level or it was simply money.

In this regard, the urban bias of the provincial ministry officials also comes in for comment. Although the Disaster Relief Committee is an excellent mechanism for eliciting local assistance, the foundation of policy for the committee was a source of disagreement. The attempt (ultimately successful) to get the committee to consider orchards as capital assets rather than crops is a case in point. The delay in covering disbursements until midwinter is another.

The most striking thing about this emergency was, of course, the massive amount of "self-help" relief generated in this mainly rural community. It is in such a community that the provincial emergency funding mechanism comes into its own - unless, of course, the area has been completely devastated. On the other hand, some provincial mechanisms

for relief worked much too slowly or inappropriately in such a situation. The Ministry of Housing took a week to survey available housing stock - a survey which could be part of MOH's regular responsibility province-wide - and, in any case, those affected in rural communities did not want to leave the immediate area. A stock of readily available emergency trailers would appear to be a good idea for the future.

Much more could also be done in order to encourage the "self-help" emergency response organization. Red Cross, CB, ham radio operators, and others played a major role in assistance during Woodstock's emergency, and they do the same in many other emergencies. As mentioned earlier, there is little encouragement of these organizations at the provincial level, and a reversal of that policy could reap surprising dividends.

10. MUNICIPAL-PROVINCIAL PLANNING AND RESPONSE - THE MISSISSAUGA TRAIN DERAILMENT AND EVACUATION⁶⁹

The Mississauga Train Derailment and Evacuation (November 10-17, 1979) can be seen as, on one hand, tying together most of the themes already put forward in this essay, and on another, presenting what amounts to a full-scale exercise of these themes. Considering the vast amount of detail already - or about to be - available on the Derailment, special emphasis will be given here on the two most important aspects of the organizational response structure: one, the implementation of the emergency command post and control group procedures by the Peel Region Police; and two, the expansion of these procedures to accommodate the "Lead Ministries" from the provincial level.

At 11:53 p.m. on the night of Saturday, November 10, 1979, a freight train approaching the Mavis Road crossing in Mississauga lost an axle due to the failure of a journal box. The train derailed at the crossing, twenty-four of the cars crashing together into a large pile. Propane tank cars, cars containing styrene and toluene, caustic soda, and one car containing chlorine were jumbled together; and when the propane tank cars began exploding in BLEVE's (Boiling Liquid Expanding Vapour Explosions) at midnight, the chlorine car was ruptured - if it had not already been ruptured in the derailment. It was later determined that seventy of the ninety tons of chlorine in the car had probably been expelled or incinerated by the propane explosions.

Initial communication of the disaster was virtually instantaneous, due to the size of the explosions. Peel Region Police and Fire Departments initiated already established fan-out procedures. Police communications alerted all regional police division commanders, the Chief of Police Doug Burrows and his deputy, CP Rail, and others, including the members of the Peel Region Emergency Operations Control Group (EOCG) as outlined in the official emergency plans.

As may be recalled, the Texaco Fire - which occurred in the same region - was handled by Police and Fire Department personnel without implementation of the plan. In this case, the scope of the possible disaster was so obvious that the first Police Superintendent on the scene made certain that the emergency plan was in effect. Fire Department dispatchers alerted neighbouring fire departments, which sent equipment, and commenced establishing "back-up" availability of men and resources. Both the Fire Department and CP Rail dispatchers alerted a private co-operative transportation emergency assistance plan service (TEAP), which then contacted Canadian Industries Limited (CIL), the local representatives of the Chlorine Emergency Plan (CHLOREP) - a plan which designates emergency response teams from industries with chlorine expertise.

Police and fire crews who arrived on the scene within minutes attempted to get the situation under control. The train had derailed in an industrial zone, at least a mile distant from residential areas on either side. Police, therefore, had initially only to evacuate skeleton staffs at plants in the area; in addition, however, spectators began pouring into the area within minutes, and a strict cordon took approximately half an hour to be put into place, even though people kept wandering down the tracks to within a quarter of a mile of the site through the night. Firefighters' attempts to get close to the wreckage were hampered by a series of explosions and showers of debris. There was confusion over what might be contained in the cars, as the cars were jumbled together and the train manifest could not immediately be tallied. Firemen contented themselves with playing water from high-pressure hoses over the burning wreck.

The fumes from the wreck prompted the first major evacuation of eight thousand residents from a mile-square area downwind of the site. A meeting between the on-scene officials at the first command post (in a Domtar plant south of the site) at 1:30 resulted in the order to evacuate and also clarified the jurisdiction of the response agencies - Police Chief Burrows assumed overall command, and Fire Chiefs Mitchell and Bentley would co-ordinate fire-fighting activities. Local Red Cross personnel had already begun setting up Square One Shopping Centre and other locations as possible evacuation sites.

Police proceeded through the streets by vehicles and with loudhailers, informing people of possible danger and requesting them to evacuate. The police cordon began to widen, as police from the Ontario Provincial Police and Metropolitan Toronto Police - eighty officers plus six Emergency Task Force members with life-support systems - and the RCMP joined the effort. It has been estimated that five hundred police, one hundred fire fighters, and two hundred volunteers assisting in traffic control were in action during the first night.

At 2:45 a.m. a further meeting was held on-site to discuss the growing seriousness of the situation. Bringing in federal troops was proposed, but was declined for the moment. At 5:45 a.m. a meeting was held at the new command post, a Peel Region van parked in a Bell Telephone site north of the Mavis Road crossing. This became the nucleus of the command operation for the next week. A press centre was established nearby, and a police liaison officer was assigned to media communication.

In the early hours of the morning, MOE officials and OPP officials began contacting senior ministers. Due to the overwhelming risk of loss of life, the Honourable Roy McMurtry, the Solicitor-General, assumed the "Lead Ministry" role and arrived on-site at approximately 8:30 a.m. By this time a meeting had already begun of the Emergency Operations Control Group at the site, consisting of Police Chief Burrows, Fire Chief Bentley, Peel Regional Council Chairman Frank Bean, Mississauga Mayor Hazel McCallion, and others. McMurtry joined this meeting, and though it is unclear at precisely which point he became the responsible agent on the scene, a difficult decision was made at 8:55 a.m. to evacuate Mississauga General Hospital.

Participants have commented that this decision marked a watershed in the proceedings since it was possible that the evacuation itself might kill patients. Moreover, the scale of the evacuations was now becoming so great that one can see a shift in perception of decision criteria at work: in the first few hours evacuation from danger was the prime consideration; subsequently, the possible danger of a hasty or ill-timed evacuation itself became a consideration.

"Worst possible case scenarios" and "lead times" thus became critical to successful mass evacuation.

The scenario modelling depended on accurate information, and the air sampling crews of the Ministry of the Environment, in conjunction with the meteorological data supplied by the Atmospheric Environment Service of Environment Canada, were used to predict vectors of possible chlorine gas dispersion. As far as lead times were concerned, officials relied on the ambulance services (alerted shortly before midnight) marshalled from neighbouring areas - one hundred or more ambulances in all - to empty hospitals in five to six hours.

Further major evacuations were announced at noon (evacuees at Square One Shopping Centre were evacuated once more), 1:35 p.m., 3:40 p.m., 9:00 p.m. and 11:00 p.m. Sunday. Evacuated areas included all of Mississauga, parts of Oakville, and Queensway Hospital in Etobicoke. At 12:30 a.m. Monday morning, Mississauga was declared closed by Mayor McCallion. Approximately 240,000 people had left their homes. Between one thousand and ten thousand evacuees went to evacuation centres manned by the Red Cross and other volunteer agencies in Malton, Streetsville, and Oakville. The rest went to stay with friends and relatives in surrounding cities or went to hotels and motels.

This initial emergency response was carried out without a single casualty, and it was the determination of the Control Group - now supported by Environment and Health officials - that a policy of continuing caution would be followed. The Control Group and the cordoned area now became dependent on the success of attempts to control the fires and stop the leakage of chlorine.

Following the extinguishing of the flames on Tuesday morning, a series of attempts to patch the ruptured chlorine tanker began, and met with failure. Residents began to appear at the cordon demanding to be allowed to return home to feed pets left behind, et cetera. Although the police have no power to evacuate people forcibly from their homes, they were prepared to charge people with obstruction if they tried to re-enter the area. One man was charged in this regard.

In the meantime police patrolled the streets and MOE mobile labs criss-crossed the area sampling for chlorine. General readings were below the danger level (3 ppm), but pockets of chlorine were concentrated in low-lying areas. The Control Group met in almost constant session through the week, assessing the situation, receiving reports from the work crews, and preparing announcements for the media.

On Tuesday 125,000 evacuees in outlying areas were allowed to return. In spite of careful announcements, many people in still cordoned areas believed they could also return, and substantial chaos ensued at various points around the perimeter.

On Thursday and Friday substantial amounts of the remaining chlorine in the tank car were drained away by the CHLOREP team, and on Friday at 3:00 p.m. and 7:42 p.m. announcements were made which allowed the rest of the evacuated residents to return home.

Estimates of the cost of the evacuation have run as high as twenty-five million dollars - not including the cost of the emergency services themselves. CP Rail, without accepting liability, paid out over five million in incidental costs to evacuees. Ultimate liability has yet to be established. The Canadian Transport Commission, which is responsible for safety on the railways, has a Commission of Inquiry investigating the causes of the derailment.

In the aftermath, the successful resolution of the event was such that the whole experience began to be referred to as a "miracle". Certainly two of the contributing factors were the time and place of the derailment: midnight, Saturday night when most persons were at home; and at an intersection in an industrial zone bounded by waste ground. Both these factors allowed for the slow and incremental expansion of the evacuation procedures. Nevertheless, much of the credit for the success can also be given to the well-designed and often-exercised emergency plan of Peel Region. As noted in the Texaco Fire case study, Peel Region's proximity to Malton Airport demanded the creation and sustaining of a substantial emergency planning effort. The Police and Fire Departments played a large role in the conceptualization of the plan, building as they did on their own inter-agency emergency plans.

The most successful aspect of the plan was the command centre. We saw it in operation on a small scale during the North York Gasoline Leak; but it was in Mississauga that the flexibility and control available through this kind of structure became apparent. Of course, had the derailment been spread over a larger area, or if the command centre had had to move a number of times, it is questionable if the formal success of this operation would have been repeated.

Having said this, three criticisms may be made. First, many evacuees complained that they were not warned that they could be away from home for several days. Given the circumstances, it is understandable that the authorities themselves were not initially aware of how long the emergency would last. However, this raises the critical point of handling voluntary evacuation, since warning residents that they may be evacuated for several days may make them reluctant to leave.

Second, then, the ground-rules for evacuation remain unclear. There is considerable doubt as to whether the power to force people to evacuate for their own safety exists in law. The Solicitor-General opined during the evacuation period that he had this power, but this may not actually be so. While it may be true that clarification of this point could be disadvantageous to the emergency response agencies, the definition - as has been outlined in some detail earlier - goes to the heart of individual rights in our society.

Third, the Mayor of Mississauga has asked that clarification be forthcoming over the role of "managing the disaster". By this she means the overseeing of the response agencies themselves. The Control Group appears to have relied on each agency to do its job without close supervision: the example used was a team of chlorine experts who fell asleep from exhaustion and were unnoticed by other personnel, thus perhaps extending the evacuation by several hours.⁷⁰

It is expected that in the months to come, other criticisms, perhaps of a more severe nature, may surface. Be that as it may, the success of the evacuation can hardly be gainsaid, and the procedures followed here are certain to be used as a model for future reference both in Ontario and elsewhere.

11. PROVINCIAL PLANNING - PICKERING EMERGENCY RESPONSE PLAN

The most extensively researched and intensively organized municipal-provincial and inter-ministerial contingency planning by a "Lead Ministry" is the contingency planning for Bruce and Pickering nuclear stations. Plans exist for the smaller reactors at Rolphton, McMaster, and Chalk River, but they are less specific and less elaborate than the plans for the commercial reactors. The emergency plan for Pickering is discussed here, partly because it is generally similar to that for Bruce, and partly because it is, of course, concerned with one of the most highly populated regions of the Province.

The plans for Pickering and Bruce were first formulated in 1974 by the Ministry of Energy (Ontario Hydro) and the Ministry of Health, in conjunction with other ministries such as the Ministry of Agriculture and Food and the Ministry of the Environment, local authorities, and the EMB. On-site contingency plans were dovetailed with the emergency plan of the Regional Municipality of Durham.

Policy, as enunciated by Mr. R. Wilson (Ontario Hydro Nuclear Health and Safety Division) at the Legislature's Select Committee on Hydro Affairs, is that

if an emergency occurs on a station, whether or not there is any off-site involvement, notification of provincial and other authorities is required.⁷¹

According to the conditions of its operating licence, Pickering must have a station emergency procedure including immediate evacuation of dangerous areas, dose evaluations, controlled access, and a requirement to assist government agencies with off-site actions. It has been recognized that the initial activation of on-site and early off-site contingency plans must be concentrated in the on-site Hydro personnel, who are on-site twenty-four hours a day and have the training and the expertise. The key person is the Shift Supervisor, who provides the link between the on-site activities and any early off-site activities (including the alert of the major off-site control group). Recent exercises have shown that the Shift Supervisor is likely to be in charge of any response to an emergency for up to twelve hours from onset.

The station itself deals in terms of a "radiation emergency" which may not have any public implications at all, nor chances for significant injury to personnel. Declaration of a radiation emergency immediately requires the Shift Supervisor to contact the Head of the Control Group (described below) off-site. He then describes the possible implication of the incident in terms of three types of Category Release. (See Table 2.) Even if the possible release is below categories described, the head of the Control Group may still proceed to convene the Control Group.

Continuing on-site for the moment, the Shift Supervisor is in command in the Control Room. The declaration of a radiation emergency is followed by a thirty-second fluctuating siren and an auxiliary message about the possible release and its location. This is repeated. Personnel report to emergency stations and are initially accounted for. The Shift Supervisor is responsible for the identification and security of the Incident Area. A Category 1 release results in the "securing of the site", the activities mentioned above, and the evacuation of the park around the site. Drinking water controls may have to be instituted, and off-site surveys will be initiated.

The Shift Supervisor has under him a Command Unit, subdivided into a Service Wing Unit and a Shift Unit. (He also has access to an *ad hoc* Advisory Group made up of the Station Manager, Radiation Control Supervisor, etc.) The Shift Unit is subdivided further into a Survey Crew, a Communications Unit, and an Incident Area Crew. The first two, in the event of a Category 1 release or above due to a break in the containment, would be under the direction of the Shift Maintenance Supervisor, who would be in charge of off-site activities and who would report back to the Shift Supervisor.

Off-site surveys are initially carried out by personnel in radio-equipped jeeps, who do "4 sector surveys" at up to 10 km from the station. This is in addition to routine and emergency environmental monitoring equipment around the station. Airborne monitoring is in the process of being installed. Attention is concentrated on the downwind and nearer sectors, the danger from radiation diminishing radically the farther away one goes from the station.

Table 2. Category release levels of radiation.

Category 1.	Permissible seven-day release limits from the station have been exceeded in a short period; however, the yearly dose limits to members of the public probably will not be exceeded, even if both external irradiation and the dose commitment due to inhalation and to ingestion of radionuclides in food and water are taken into account.
Category 2.	The doses and dose commitments received by members of the public exceed those specified for Category 1, but the release of radioactivity will not cause the yearly dose limit to be exceeded, either by external irradiation alone or by the dose commitment resulting from inhalation. The intake of radioactivity through water and the food chains will, however, if permitted to continue, lead to a dose commitment exceeding the yearly dose limit for members of the public.
Category 3.	The dose from external irradiation and/or the dose commitment from inhalation will by themselves, if no action is taken, significantly exceed the yearly dose limits for members of the public, without taking into account the additional dose commitments received through water and food chains.
Liquid releases.	An exclusively liquid release of radioactivity is considered serious if, over a period of one day, the release exceeds the total release of radioactivity permitted for a period of one month.

(Source: Ontario Hydro, reprinted from Haussmann and Timmerman, 1979)

Information is relayed back to the Shift Supervisor. In addition to dealing with the station response, the Shift Supervisor will also have called (among others):

- i) the Systems Supervisor, Richview (to alter power arrangements)
- ii) the Head of the Ministry of Labour Control Group
- iii) the Reactor Safety Engineer (Ontario Hydro)
- iv) Durham Regional Police (if possible outside release)
- v) Ministry of the Environment
- vi) Pickering Water Treatment Plant (to close off pumping station)
- vii) Municipal water supply.

The call to the Reactor Safety Engineer begins a fan-out notification of an Ontario Hydro Advisory Group (Nuclear Operations Manager and others), Health and Safety Division, Atomic Energy Control Board (AECB), Department of National Health and Welfare, Communications Services. AECB personnel are likely to already be on-site, but their role is uncertain.

The most important call, already listed, is to the Head of the Ministry of Labour Control Group (Dr. Max Fitch). As stated above, even non-category releases may cause him to convene his colleagues. The Shift Supervisor informs the Head of the Control Group (or one of his alternates) of the category level of the release, and indicates whether or not the public will be involved. The Control Group may then be convened - 400 University Avenue, Toronto being the designated control centre.

The Control Group consists of representatives from the Ministry of Labour, the Ministry of Agriculture and Food, the Ministry of the Environment, the Ministry of Health, Ontario Hydro, Ontario Provincial Police, Medical Officers of Health from Scarborough, Durham, Toronto, and scientists from the University of Toronto. Labour is responsible for the administration of the Control Group, its headquarters, and the preparation of public information. Agriculture and Food carries out foodstuff sampling and contaminated food disposal. Environment conducts air, water, and soil sampling, and also advises on meteorological conditions. Health advises the local Medical Officers. OPP provides policing services. The scientists from the University provide laboratory facilities for reception and interpretation of data.

The heart of the Control Group response, and the reason for the Control Group coming under the Ministry of Labour, is the Radiation Protection Service of the Ministry of Labour. In the event of an incident this Service becomes the core of the Survey Co-ordinating Group, the monitoring and testing arm of the Control Group. This Survey Group would operate in conjunction with the near-site surveying being done by Ontario Hydro, and all the data from both groups would be forwarded to the Control Group, who must then issue public statements and formulate responses.

As stated above, however, it is the Shift Supervisor on scene who must make the early decisions - it being recognized (and confirmed by the recent exercises) that the "fan-out" procedure initiated by the Head of the Control Group may take some hours.

Indeed, it is partly assumed that the Shift Supervisor may not be able to contact anyone for up to eight hours. Transfer of power to the Control Group takes place only after it is assembled. The responsibility for this transfer is uncertainly placed at present: the Ministry of Labour's view, expressed in the Select Committee hearings, was that it was a question

of the Head of the Control Group being satisfied that... he can now assume control;⁷²

whereas Ontario Hydro, in an interview, believed that formal transfer takes place upon the request of the Ministry of Labour, but that the Shift Supervisor will not shift until he considers the Control Group is prepared.⁷³

In the interim the Shift Supervisor and the Head of the Control Group are expected to be in constant communication. Redundant phones are in place, and a "dedicated line" - only coming on line during an emergency - is being installed. Alternative systems of communication include radio communication utilizing a high-grade antenna atop 400 University Avenue, which can keep in contact with Pickering through the field station.

Much of the early communication will be concerning the state of the emergency response, which must be set in motion by the Shift Supervisor. One early action he must take is the alerting of the Durham Regional Police, who, in turn, activate the Durham Region Peacetime Emergency Plan. In its initial stages this plan acts as a back-up to the efforts of Ontario Hydro, and it is only with the increasing seriousness of the emergency that local government enters the response picture.

As outlined above, a Category 1 release would determine the "securing of the site"; a Category 2 release might necessitate traffic control, milk restriction, and some form of "stay-in" warning issued over local radio stations; a Category 3 release might result in the issuing of potassium iodate pills for the thyroid to residents in the area, and might also result in protective evacuation. At the time of writing (June, 1979), Ontario Hydro is seriously considering the pre-issuing of potassium iodate pills to residents in the area surrounding Pickering (and Bruce), so as to obviate the necessity of using Durham Police and Ontario Hydro personnel during a radiation emergency for door-to-door work.

The local Emergency Operations Control Group, made up of the Chairman of the Region of Durham, the mayors of the region's municipalities, and other emergency personnel, remains in contact with Ontario Hydro and the off-site Control Group throughout. Its responsibilities include the control of regional and municipal services to minimize risk, and it takes its "cue" from the Shift Supervisor (or Head of the Control Group after the transfer). However,

the actual authorization (of emergency measures, especially evacuation) would be through local authorities. The arrangements are made through local authorities.⁷⁴

Though the instructions and the expertise belong to Ontario Hydro, it remains the case that the municipality is the responsible agency. The largest role the local Group would play is probably in the area of evacuation. Evacuation - carried out by Ontario Hydro officials and Durham police and fire personnel - on a limited basis, would take place under Category 3, i.e. if members of the public would receive an additional whole dose of 10 rem (or 0.5 rems/hour of gamma radiation measured at one meter above the ground), unless evacuation occurred within the next twelve hours. Evacuees would be advised - and in some cases assisted - to move to the Iroquois Park recreational complex at Whitby, the first designated reception and decontamination centre. This centre is capable of handling five hundred persons, and will be under the general operational guidance of Ontario Hydro (offering radiation expertise), the Ministry of Health (local officers), and Durham Regional Police. Medical facilities are in place at the local hospital, and medical personnel - at Hydro expense - have been trained in radiation emergency treatment. Further evacuations and treatment would require the use of supporting resources outlined in the Emergency Plan.

These measures and others related to municipal welfare would continue after the transfer of control to the provincial level off-site Control Group. The extent of further local activity would expand or contract in consultation with the Shift Supervisor, the Head of the Control Group, and other interested parties.

In addition to its surveying, monitoring, and testing, the Control Group - upon assumption of control - becomes responsible for any further decisions regarding large evacuations, et cetera, outside the Regional Municipality of Durham; and it also becomes responsible for the dissemination of advice and information to the Ontario government and the public. It is presumed that an extremely serious situation would involve the members of the Emergency Planning Committee of Cabinet and the Premier taking advice from the Control Group.

All information to the public after the initial public warnings and information given out by the Shift Supervisor at Pickering will be given out by the Control Group. Pre-packaged information would be given to members of the press, and an entire floor of 400 University has been designated for the use of the media. (Twenty to forty telephone lines have been installed.) It is hoped that in this way overlapping and conflicting advice can be avoided, and that direction of the public response to the incident may be managed smoothly.

This, in rough outline, is the contingency plan for emergency response to an incident at Pickering. Having been worked out in conjunction with the ministries and municipalities involved, it is the most detailed plan with regard to particular responsibilities in the Province of Ontario. It is in the process of revision, and anything said below must take that into account. It is also under scrutiny at present by the Ontario Select Committee on Hydro Affairs, who will study its provisions during the summer of 1979.

The most general criticism of the plan that can be made, and the most serious, is that it is, in large part, an unexercised plan. Yearly simulations of on-site response to an emergency are required by the operating licence given to Pickering (and Bruce), but only five exercises of the Survey Co-ordinating Group and the Control Group seem to have been carried out since the Pickering and Bruce stations came on line. A full-scale on-site and off-site exercise involving all the participants has never been carried out. Evacuation practices have never been mounted.

As hinted at above, questions of transfer of power, which may complicate the emergency response effort, have not been settled. The role of the municipalities in the hours and days after the initial urgent response has not received adequate attention; for instance, although it is stated quite categorically that all information-handling will emanate from the Control Group, there is also recognized to be a municipal information component in the eventuality. What, moreover, is to be done when the inevitable press contingent descends on the area and leaves 400 University behind?

Communications is the core of the response effort, and the most recent exercise of the Control Group (June 27, 1979) seemed to indicate that this was the worst-handled aspect of the event. Doubts were expressed at the Select Committee hearings about the ability of the Group to deal with this problem, and these doubts seem to have been borne out. It was pointed out, however, that at least one problem faced by the Three Mile Island incident, namely, the conflict between business and government in getting at the proper details of the problem, is not faced in Ontario - due to the operating responsibilities and the contingency plans.

The communications element in the response is also complicated by the fact that it is the Shift Supervisor who must make the initial public statements. It is difficult to believe that he can do much more than give out pre-set instructions or orders to the public. In fact, it is quite difficult to believe that the Shift Supervisor, as well as attempting to cope with what might be a major nuclear disaster endangering his personnel and even himself, can do all the other things he is expected to do under the Plan. One of the things a full-scale emergency exercise might test is the ability of the Shift Supervisor to carry out all the functions required.

It remains the case at the provincial level that the Control Group, while presumably capable of handling its surveying and monitoring functions, and possibly being able to cope with the media, would be helpless in the face of large-scale panic in Toronto or in the event of the necessity for mass evacuation. Decisions on questions of this scale would quickly pass into ministerial hands; and, at this time, these decisions would come up against the reality of the impossibility of evacuating Toronto speedily. The saving grace is that - except in the event of terrorist attack or some other bizarre event - nuclear radiation from a Pickering leak or meltdown would be dissipated before it reached Toronto, and "stay-in" procedures would be most beneficial. It is doubtful, however, that (at the time of writing) there is any provision for the evacuation of pregnant women and small children from the areas that might be affected most by the admittedly remote contingency.

The roles of the Lead Ministries in the contingency plans are quite clearly articulated, and the planning effort itself reveals how well this kind of definition and allocation can work in what is a relatively straightforward instance of an emergency that, as it grows, would involve larger and larger components of a response effort. It is a curiosity that the Control Group should be in the Ministry of Labour, and that might be a factor in an emergency when the Ministry of Labour is one of the last ministries anyone would assume (on the outside) to be involved in nuclear accident response. Would the more obvious ministries - Health and Environment and Energy - funnel their telephone queries to the Control Group in an emergency? The curiosity - put no higher than that - is a direct response to the availability of radiological equipment in the Ministry of Labour, and not through any other expertise it might have had when the allocation was made.

This highlights a "Lead Ministry" shortcoming: the allocation of emergencies was only partly done on a related ministry basis. The limitations of that system are obvious: the Ministry of Transportation and Communication, which has many of the vehicles and much of the equipment that would be called upon in many types of emergency, was not designated a "Lead Ministry" - this appears to be because no one could think of a specific emergency to tie MTC into the program. Beyond that, politics played its part: was the Ministry of Northern Affairs given a "Lead Ministry" role in the North without any real emergency tagged on, simply because it is a "presence" in the North? The same suspicion lingers about the edges of the Pickering Contingency Plan: all the "political bases" have been touched, which is an excellent way of ensuring that jurisdictional questions do not arise in mid-incident, but one wonders if a better emergency response (of whatever type) might be overlooked in the provision for the best political response.*

*It appears that plans are underway (November 1980) to re-organize the Contingency Plans, including the transferal of Control Group Headquarters away from 400 University Avenue, and possibly into OPP premises.

12. RECOMMENDATIONS

A number of specific recommendations have been made in the course of this paper. In addition, a few general recommendations may be appropriate at this point.

1. The Ontario government should incorporate in new legislation the mechanisms involved in the declaration and carrying out of "Lead Ministry" responses.

This legislation should define as clearly and flexibly as possible what is meant by an "emergency" and/or a "disaster area"; who may declare such a condition to be in effect; and what are the provincial responsibilities over and above those already in force at the municipal level. The use of this language involves matters so important and so open to abuse that proper debate and enshrinement of their usage in legislation is a clear priority.

2. The Ontario government should seriously consider re-introducing some support for the municipal planning effort.

At present, liaison between the municipalities and the province is the worst aspect of the Ontario emergency planning structure. It appears that the municipalities are channeling their complaints to the province through the Regional Director of Emergency Planning Canada. While the parties involved seem to prefer the present arrangement to that which obtained under the old EMB system, it is still not a very healthy long-term arrangement. In addition, a renewed Ontario presence might assist in bringing about a return to a more "universal" planning coverage.

3. In an earlier version of this paper, a recommendation was made that the Ontario government should create an emergency planning secretariat or emergency planning officer attached to the Emergency Planning Committee of Cabinet. At the time of writing (June, 1980), a new emergency planning officer has been appointed to the Solicitor-General's department. This is an encouraging sign of the increased importance of emergency planning in provincial policy. It is important, however, that the cycle of boom-bust in emergency planning not begin again. If international conditions warrant additional emphasis on civil defence, for instance, firm federal funding support from the National Defence establishment should be sought for a separate program not included under the mandate of provincial emergency planning. As the most important civil defence task by far is the surveying and provision of shelter space, the Ministry of Housing - monitored perhaps, by the emergency planning officer - should be given this task.

In the same vein, no consideration should be given to the re-introduction of a sizeable Emergency Measures Branch in Ontario, unless it is on a much larger scale and with a strong emergency powers mandate.

4. The emergency planning officer should become the chairman of a Provincial-Municipal Emergency Planning Committee. This committee should seek to re-establish the liaison between provincial and municipal planners. At the same time - or perhaps as a subsidiary function - this committee should seek ways to encourage the volunteer agencies in existence throughout the province. While funding these organizations may be a moot point or even unnecessary, recognition by the government is often more important than money for morale. Ham radio operators, for instance, are excellent candidates for recruitment in emergencies.

5. The on-site and off-site contingency plans for Pickering (and Bruce) should be exercised, together, and they should be the subject of detailed external criticism from the public.

Recent events and the sheer visibility of the Pickering and Bruce contingency plans necessitate a stepped-up development of the various aspects of the response to a contingency. Serious inefficiencies and serious snarls that show up here - in the "flagship" of the planning effort - could have devastating repercussions. Special consideration of the transfer of power to the Control Group, the taxing role of the Shift Supervisor, and the public information set-up should be part of any overall review.

6. Support for research by outside agencies, including universities, should be forthcoming. Certain research goals such as the following might be worth pursuing:

- (a) research into the perception of risk and the evaluation of hazards by the public would assist in the proper foundation of acceptable policy;

- (b) research into the "gaps" or overlapping areas of responsibility could bring unnoticed problems to the light;
- (c) research into the ways in which decision-making (both socio-economic and political) is making Ontario more or less vulnerable to risks of varying kinds could provide an "early warning system" of possible future emergencies.

GENERAL CONCLUSION

The unproclaimed policy of the Ontario government is to handle each case as it arises. It is a policy not without merit. The Lead Ministries, if they do their job properly - and it remains something of an if - are capable of handling the routine and not-so-routine problems that may arise. Ontario is rich in resources, human and otherwise, and relatively poor in emergencies and disasters. This has shaped the perception of emergency planning in Ontario and probably maximized the strengths inherent in the system. It has, unfortunately, also hidden weaknesses that may only become apparent in conditions of severe stress, when weakness can be least afforded.

Flexibility in the face of unexpected events is a virtue. However, while a creature without a backbone may be flexible, it is ultimately limited in its usefulness, especially to outsiders who may have to fathom in a hurry an amorphous system of responses. More to the point, a backbone occasionally leads to a brain: in the present arrangement of Ontario emergency planning there seems to be no mechanism whereby an overall governing structure can learn from its mistakes, store up its experience, and share it around easily.

A good example of what is now lacking in Ontario is something virtually everyone in government dismisses out of hand, and which, by the very virtue of being unthinkable, is a good example; namely, civil defence. This is a long-term problem with no visible "return on investment", and it has virtually no constituency. Indeed, the Emergency Measures Branch was probably disbanded as much for the obvious fact that capable people were perceived to be sitting around planning for something that never happened as for any other reason. This is not a legitimacy problem faced by the Fire Department, for instance. It remains the case, however, that the only realistic external threat against Canada of any magnitude is nuclear war (Defence White Paper, 1971), and that provision for minimal sheltering could save thousands of lives in the event. Ironically, the lack of a shelter program complicates contingency planning for accidents at Pickering, since the difficulty of evacuating Toronto in a severe radiation emergency may make shelter the only viable alternative.

An earlier version of this paper suggested that the true test of the "Lead Ministry" concept would be if it worked during a major disaster which cut across varying jurisdictions. The Woodstock Tornado and the Mississauga Train Derailment were major events, and the first was certainly a major disaster. As has been mentioned before, however, the success of both enterprises depended to a great extent on the quality and strength of the municipal response. In the case of the first, the strength of the community was crucial; in the case of the second, the well-designed and well-exercised emergency plan, as well as a certain amount of sheer luck, made comparatively light work of a massive emergency situation.

It cannot be stressed too often that it is this lowest level, "first resort" response, which deserves to be part of the provincial emergency planning effort. Clarification of powers and support of municipal planning would be important strengthenings of this effort.

In the emergencies cited above, and in others, the "Lead Ministry" concept has worked reasonably well. The true test of its worth, however, is not what the "Lead Ministry" framework does for the lead ministries themselves, but how it detracts from or enhances the whole planning effort throughout the province; and, of course, how this in turn results in better emergency planning and response for the people of Ontario.

It is by this criterion that future provincial emergency planning efforts will be tested and, ultimately, judged.

ACKNOWLEDGEMENTS

The Preface indicates specific debts, both theoretical and financial. I should like to acknowledge here the personal assistance given me at every stage of this report by Professors Anne Whyte and Ian Burton of the Institute for Environmental Studies, University of Toronto.

I should like also to refer to the enlightening conversations I have had with people in the governments of Ontario, Metropolitan Toronto, and various Municipalities; especially Mr. R. Eveson and Mr. G. R. Childerhose, both of the Ministry of Labour. Mr. Denis Amyot, the Regional Director for Ontario of Emergency Planning Canada, set me straight on a number of issues during a valuable conversation.

An earlier draft of this report came under the courteous and helpful scrutiny of F. Christof Haussmann, Susan B. Hazen, Diana Liverman, John Handmer, Heather Myers, and Bill Needham. The manuscript was reconstructed and typed at various stages by Ann Young, Bev Thomas, Kathy Wilson, and Laurie Detenbeck.

FOOTNOTES

1. The origin and best discussion of this terminology is in J.L. Austin, How to Do Things with Words. See also John R. Searle, Speech Acts. (Harvard University Press 1975, Cambridge, Mass.)
2. Joseph Scanlon and Brian Taylor, Two Tales of a Snowstorm. ECRU Field Report 77/3 (Ottawa: School of Journalism, Carleton University), pp. 2-3.
3. As in Howard B. Shapiro and Patricia L. Cummings, Problems in the Use of Ad Hoc Structures in DOD Crisis Management and Implications for Change (McLean, Virginia: Human Sciences Research Inc., 1976).
4. John G. P. Layton, Provincial Emergency Action Plan (New Brunswick: New Brunswick EMO, 1975), p. 1.
5. Note that The War Measures Act, R. S. C. 1970 specifically includes "apprehended insurrection".
6. See Peter H. Russell, Leading Constitutional Decisions (Toronto: McClelland and Stewart Ltd., 1965) for a general discussion; and more recently, and in greater detail, William H. McConnell, Commentary on the B. N. A. Act (Toronto: Macmillan and Co. Ltd., 1977).
7. Gerald Gall, The Canadian Legal System (Toronto: The Carswell Co. Ltd., 1977), p. 61.
8. McConnell, *op. cit.*, p. 147.
9. *Ibid.*, p. 156.
10. Debate on The Energy Supplies Emergency Act, R. S. C. 1979, March 13, 1979, (Hansard).
11. *Ibid.*
12. *Ibid.*
13. As with The Anti-Inflation Act, the courts have been reluctant to encroach on Parliament's powers of definition.
14. See Ron Haggart and Aubrey E. Golden, Rumours of War (Toronto: New Press, 1970).
15. S. M. Waddams, Introduction to the Study of Law (Toronto: The Carswell Co. Ltd., 1979), pp. 144-145.
16. A. J. P. Taylor, English History 1914-1945 (Oxford: Clarendon Press, 1976), p. 2.
17. Barbara M. Wilson, Ontario and the First World War (Toronto: University of Toronto Press, 1977), pp. xxv-xxvii.
18. *Ibid.*, pp. li-lxix.
19. F. F. Schindeler, Responsible Government in Ontario (Toronto: University of Toronto Press, 1969).
20. Portions of this paragraph and the sketch of Canada-Ontario relations in the following section derive from a Civil Emergency Planning Résumé, fact sheet published by Emergency Planning Canada.
21. Joseph Schull, Ontario Since 1867 (Toronto: McClelland and Stewart Ltd., 1978), p. 309.
22. *Ibid.*, p. 312.
23. Ontario Order-in-Council 201/60.
24. *Ibid.*

25. Interview with former EMB Director, N. W. Timmerman (by Dale M. DuQuesnay).
26. Excerpt from EMB document.
27. Excerpt from EMB document.
28. Excerpt from EMB document.
29. Excerpt from EMB Annual Report, 1964.
30. Excerpt from EMB document.
31. Rodney M. Kueneman, Organization-Environment Interaction: Organizational Legitimacy and the Non-Autonomous Organization (Ohio: Thesis, Ohio State University, 1975), p. 66.
32. Excerpt from EMB Annual Report, 1965.
33. Excerpt from EMB document.
34. The Globe and Mail (Dec. 21, 1972).
35. *loc. cit.*, The Globe and Mail.
36. Lt. Gen. Michael Dare, The Enhancement of Crisis Handling Capabilities within the Federal Structure (Ottawa: Queen's Printer, 1972), p. 32.
37. *Ibid.*, p. 39.
38. Outline of events from EMB documents.
39. Excerpt from EMB document.
40. This was the Honourable d'Arcy McKeough. Among the considerations was McKeough's attempt to make strong budgetary restraint provincial policy.
41. Kueneman, *op. cit.*, pp. 122-148.
42. Andrew Currie, "Emergency Measures in a Municipality", EMO National Digest, Vol. 13, No. 1 (Ottawa: Canada EMO, 1973).
43. Provincial-Municipal Liaison Committee memorandum, November, 1974.
44. Excerpt from EMB document.
45. For fuller discussion see F. Christof Haussmann and Peter Timmerman, A Guide to Emergency Planning and Responsibilities in Ontario (Toronto: Emergency and Risk Research Working Paper No. 3, Institute for Environmental Studies, 1979).
46. Interview with Denis Amyot, Regional Director of EPC (by Peter Timmerman).
47. Report No. 4 of the Legislation and Licensing Committee for consideration by the Metro Council on June 19, 1979, pp. 7-8.
48. *Ibid.*, p. 4.
49. *Ibid.*, pp. 8-9.
50. The Globe and Mail (June 1, 1979)
51. *Ibid.*
52. Report No. 4 (cited above), p. 13.
53. *Ibid.*, p. 10.
54. Excerpt from "Concerned Parties" letter by Alderman Allan Sparrow, January 30, 1980.
55. Report No. 2 of the Legislation and Licensing Committee for consideration by Metro Council on February 12, 1980, p. 40.

56. Excerpt from EMB document.
57. Susan B. Hazen, The Texaco Fire: October 2, 1978 (Toronto: Emergency and Risk Research Working Paper No. 4, Institute for Environmental Studies, 1979), p. 15.
58. *Ibid.*, p. 7.
59. *Ibid.*, p. 25.
60. *Ibid.*, p. 27.
61. Ontario Legislature Select Committee on Ontario Hydro Affairs, April 27, 1979, Dr. Max Fitch.
62. Excerpt from EPC memorandum.
63. *Ibid.*
64. *Ibid.*
65. See Footnote 61.
66. The information in this section derives from Susan B. Hazen et al., The North York Gasoline Leak: February 21, 1979 (Toronto: Emergency and Risk Research Working Paper No. 5, Institute for Environmental Studies, 1980).
67. Material in this section is from an unpublished report on the Oakville Pesticides Fire, which was based on newspaper reports and interviews with leading participants.
68. The material in this section derives from an as yet unpublished paper on The Woodstock Tornado by Oliver Coomes, Mark Rudolph and John Wilson of the Institute for Environmental Studies. This report is a summary and analysis of the published reports on the tornado, and it contains as well the results of numerous interviews with key actors.
69. Part of the material in this section has been published in my report The Mississauga Train Derailment and Evacuation: November 10-17, 1979; Event Reconstruction and Organizational Response (Toronto: Emergency and Risk Research Working Paper No. 6, Institute for Environmental Studies, 1980).
70. Remarks made at the 27th Annual Ontario Industrial Waste Conference, June, 1980.
71. Ontario Legislature Select Committee on Ontario Hydro Affairs, April 26, 1979.
72. *Ibid.*
73. Interview with Mr. G. R. Childrhose, Ontario Hydro.
74. Mr. R. Wilson, *loc. cit.*

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APPENDICES

✓ APPENDIX I: THE EMERGENCY MEASURES ACT (R. S. O. 1970, REPEALED 1976)

CHAPTER 145

THE EMERGENCY MEASURES ACT

- Interpre-
tation 1. In this Act,
(a) "Director" means the Director of the Emergency Measures Branch of the Department of Justice;
(b) "emergency" means
(i) a real or apprehended war, invasion or insurrection proclaimed to exist under the War Measures Act (Canada), or
(ii) a natural emergency declared to exist under section 3;
(c) "Minister" means the Minister of Justice and Attorney General. 1962-63, c. 41, s. 1; 1965, c. 36, s. 1, *amended*.
- R. S. C.
1952,
c. 288
- Emergency
Measures
Branch 2. There shall be a branch of the Department of Justice to be known as the Emergency Measures Branch which shall consist of the Director and such other officers and employees as are deemed necessary. 1965, c. 36, s. 2, *amended*.
- Declaration
of natural
emergency 3. The Minister may declare a natural emergency to exist during the time, not exceeding ninety days, and in the part of Ontario that he designates. 1962-63, c. 41, s. 3, *amended*.
- Plans of
provincial
govern-
mental
bodies 4. (1) It is the responsibility of,
(a) each Minister of the Crown presiding over a department of government; and
(b) each board, commission or other branch of government designated by the Lieutenant Governor in Council,
to formulate a plan to provide for the continued functioning of the necessary services of the department or branch of government in the event of an emergency.
(2) Each county together with the local municipalities within the county that do not form part of the county for municipal purposes shall formulate a plan to provide for the continued functioning of municipal government and the necessary services of the municipalities in the event of an emergency. 1962-63, c. 41, s. 4 (1, 2).
(3) Notwithstanding subsection 2, The Regional Municipality of York and The Municipality of Metropolitan Toronto shall formulate separate plans. 1962-63, c. 41, s. 4 (3), *amended*.
(4) Every municipality in a territorial district shall formulate a plan to provide for the continued functioning of municipal government and the necessary services of the municipality or municipalities in the event of an emergency. 1962-63, c. 41, s. 4 (4).
- Municipal
plans
- Exception
- Plans of
municipalities
- Duties of
Director
Approval by
Minister 5. (1) Every plan shall be prepared under the supervision and guidance of the Director. 1962-63, c. 41, s. 5 (1); 1965, c. 36, s. 3.
(2) Every plan and every amendment to a plan is subject to the approval of the Minister, and, before approving a plan or amendment, the Minister may make such alterations as he considers necessary for the purpose of uniformity or of co-ordinating the plan with other authorities or plans. 1962-63, c. 41, s. 5 (2), *amended*.
- Regulations 6. The Minister may make such regulations as he considers necessary for the purposes of this Act. 1962-63, c. 41, s. 6, *amended*.
- Interpre-
tation 7. (1) In this section,
(a) "emergency area" means the area in which an emergency exists;
(b) "minister" means a member of the Executive Council;
(c) "Prime Minister" means the President of the Executive Council.
(2) The powers and duties under any Act of any official, board, commission or other branch of the Government of Ontario may be delegated by an approved plan to any official, board, commission or branch of the government of a municipality for the purposes of the operation of the plan.
(3) Where an emergency exists in an emergency area that includes all or part of two or more municipalities that have separate plans, the exercise by a municipality in the emergency area of its powers and duties under this or any other Act for the purposes of the operation of a plan is subject to the direction and control of the Prime Minister or a minister designated by him, where he considers it necessary, and, without restricting the generality of
- Delegation
of powers
and duties
- Emergency
powers

the foregoing, the Prime Minister or minister designated by him may direct and control the administration, facilities and equipment of each municipality in the emergency area for the purposes of,

- (a) maintaining, clearing and controlling the use of roads, streets and other public ways;
- (b) generating, transmitting and distributing electric power and controlling the use and allocation of equipment for the purpose;
- (c) obtaining and distributing accommodation, food and clothing and providing other welfare services;
- (d) notwithstanding section 9 of *The Energy Act*, generating, transmitting and distributing gas and controlling the use and allocation of equipment for the purpose;
- (e) providing or maintaining water supplies and sewage disposal;
- (f) the enforcement of law;
- (g) the fighting or prevention of fire; and
- (h) the health, safety and welfare of the inhabitants of the emergency area,

and the powers and duties of the municipality, upon the direction of the Prime Minister or minister designated by him, may be exercised for the benefit of any part of the emergency area notwithstanding that it is outside the boundary of the municipality.

Assistance

(4) Where an emergency exists in Ontario or any part thereof, the Prime Minister or a minister designated by him may require any municipality in Ontario to provide such assistance as is considered necessary to the emergency area or any part thereof, and may authorize the payment of the cost of such assistance out of the Consolidated Revenue Fund.

Plans to govern

(5) Where an emergency exists, the approved plans applying to the emergency area shall operate according to their provisions, notwithstanding the provisions of any other Act. 1965, c. 36, s. 4.

Agreements for contribution toward cost

8. (1) The Minister, with the approval of the Lieutenant Governor in Council, may make agreements with the Crown in right of Canada in respect of the payment by Canada to Ontario of any part of the cost to Ontario and to municipalities in Ontario of planning or preparing for an emergency or of executing emergency plans.

Agreements for services, equipment and material

- (2) The Minister, with the approval of the Lieutenant Governor in Council, may make agreements with the Crown in right of any other province for the provision of any service, equipment or material in an emergency. 1962-63, c. 41, s. 7.

APPENDIX II

O.C. 1484/75

Copy of an Order-in-Council approved by Her Honour the Lieutenant Governor, dated the 28th day of May, A.D. 1975.

Upon the recommendation of the Honourable the Premier, the Committee of Council advise that an Emergency Planning Committee of Cabinet be established to monitor the state of emergency preparedness in Ontario and to review at regular intervals the state of emergency planning in the ministries and agencies of government.

The Committee further advise that the members of the said Committee be the Minister of the Environment, Minister of Health, Minister of Natural Resources, the Attorney General, the Chairman of the Management Board and the Solicitor General and that the Solicitor General be designated as Chairman.

Certified, Clerk Executive Council.

APPENDIX III

Copy of an Order-in-Council approved by Her Honour the Lieutenant Governor, dated the 28th day of May, A.D. 1975.

Upon the recommendation of the Honourable the Premier, the Committee of Council advise that the following Ministries be designated to take responsibility for coordinating the response of the Government of Ontario to the types of emergency situations described opposite thereto, with the assistance of other ministries and agencies of government as may be required:

<u>Designated Ministry</u>	<u>Responsibility</u>
Environment	Spills of chemicals, oil, or other contaminants or toxic agents; gas or oil pipeline breaks.
Health	Epidemic Nuclear Reactor accident with off-site effects. Heavy Water Plant accident with off-site effects.
Natural Resources	Flood Forest Fire
Solicitor General	Major Air Crash. Other Peacetime Emergencies. War Emergency.
Treasury, Economics and Intergovernmental Affairs	Funding and coordination of extraordinary Provincial expenditures on emergencies

Certified, Executive Council.

APPENDIX IV

O.C. 178/79

Copy of an Order-in-Council approved by Her Honour the Lieutenant Governor, dated the 17th day of January, A.D. 1979.

Upon the recommendation of the Honourable the Premier and President of the Council, the Committee of Council advise that the Emergency Planning Committee of Cabinet, established to monitor the state of emergency preparedness in Ontario and to review at regular intervals the state of emergency planning in the ministries and agencies of government, be continued.

The Committee further advise that effective the 1st day of January, 1979, the said committee be comprised of the following members who shall take responsibility for coordinating the response of the Government of Ontario to, but not be limited by, the types of emergency situations described opposite thereto;

Minister

Energy	Energy supply matters
Environment	Spills of chemicals, oil, or other contaminants or toxic agents; gas or oil pipeline breaks.
Health	Epidemic
Intergovernmental Affairs	Funding and coordination of extraordinary Provincial expenditures on emergencies.
Labour	Nuclear reactor accident with off-site effects. Heavy water plant accident with off-site effects.
Natural Resources	Flood Forest Fire
Solicitor General	Major air crash. Snow emergency. Other peacetime emergencies. War emergency.

and that the Attorney General and Chairman of Management Board of Cabinet also be members.

And the Committee further advise that the Solicitor General be designated as Chairman.

And the Committee further advise that any Order-in-Council inconsistent with these recommendations be rescinded.

Certified, Deputy Clerk, Executive Council.

APPENDIX V

RESEARCH COMMITTEES OF THE ASSOCIATION OF EMERGENCY PLANNERS OF ONTARIO

<u>Committee</u>	<u>Chairman*</u>
Transportation of Hazardous Material	D. McCracken London/Middlesex (1)
Radiological Transportation Hazards	H. C. W. Camp R. M. of Waterloo (2)
Communications	F. S. Wotton R. M. of Durham (3)
Rescue and First Aid	F. F. Holcombe R. M. of Ottawa/Carleton (4)
Floods and Forest Fire	G. A. Brillinger Cochrane District (5)
Land, Air and Water Accidents	E. A. Fallen Thunder Bay (6)

*Each Chairman is an emergency planning officer in the municipal area that follows his name, as well as the zone co-ordinator for the zone shown in brackets within which the municipal area is located.

(Source: DuQuesnay, 1978)

P. TIMMERMAN

APPENDIX VI

ELEMENTS OF A CONTINGENCY PLAN	MUNICIPALITIES															
	Algonia/Sault Ste. Marie	Atikokan	Brant County	Cochrane	Durham	Haldimand/Norfolk	Halton	Hamilton/Wentworth	Kirkland Lake	Leeds and Grenville United	London/Middlesex	Niagara	Nipissing	Ottawa/Carleton	Owen Sound/Grey County	Peel
Identification of purpose (hazard to be dealt with)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Pertinent legislation and by-laws	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Emergency Executive Committee	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Emergency Operations Committee	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Advisory Committee (local lead ministry representatives)	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Role of each emergency service	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Inventory of emergency resources	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Identification of key personnel	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Warning procedures	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Mutual aid agreements	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Procedures to obtain Federal and Provincial aid	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Procedures to obtain help from specialized groups	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Public information procedures	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Communications Plans	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Emergency power and water supplies	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Insurance provisions	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Off-site plans, e.g. nuclear plants, penitentiaries, etc.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Airport disaster plans	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Emergency landing strips, helicopter pads, etc.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Metropolitan Toronto is under the jurisdiction of the Metropolitan Police Department and emergencies are dealt with under their disaster control procedures

NO PLANS AT PRESENT

York	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Whitson	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Waterloo	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Haliburton	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Victoria/Haliburton	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Thunder Bay	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Sudbury	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Glengarry	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Stormont/Dundas/Sarnia	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Fort Francis	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Rainy River/Quinte Area	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Peel	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Owen Sound/Grey County	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Ottawa/Carleton	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Nipissing	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Niagara	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
London/Middlesex	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

NO PLANS AT PRESENT

Leeds and Grenville United	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kirkland Lake	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Hamilton/Wentworth	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Halton	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Haldimand/Norfolk	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Durham	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Cochrane	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Brant County	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Atikokan	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Algonia/Sault Ste. Marie	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

(aircraft accidents)

APPENDIX VII

HISTORIC TIME-LINE

Prime Minister	Event-Time Line	Federal Policy	Ontario Policy
King	WW-II	1939- ARP -	
		1945- ARP - dismantled	-Ministry of Planning and Development
St. Laurent		1948- Cabinet Defence Committee	
	N.A.T.O.	1949- Civil Defence (CD)Coordinator -	
	Korea	1950- Ministerial Conference: new CD programme; by 1955, Fed/ -Aug. 50	Oct. 50 -O-I-C: CD programme adopted.
	Hurricane Hazel	1954- Prov. cost-share 75% - 1955 90% - 1960 Municipal Rebates	-O-I-C: CD Coordinator; Chmn. and Sc' Planning Cttee, CD Cttee.
		1955-	
Diefenbaker	Soviet I.C.B.M. launched Aug. 1957	1957-	
		1959- Ottawa Conferences: upgrade CD - EMO	Jan. 60 - O-I-C: EMO
		1960-	
Pearson	Cuban Crisis	1962- 1963-	Apr. 63 -Emergency Measures Act: EMB. Dept. of Justice
Trudeau	Montreal Police Strike	1968- "Phoenix" -	
		1969- CEMO unveils new policy -Sept. 70	
		1970-	
	October Crisis	1972- Dare Report suggests cell and EPC-type organization -Oct. 72	Jun. 72 -review of EMO suggests Task Force
	Great Lakes Flooding	1973-	Mar. 73 -Flooding prompts inquiries into EMO
		1974- National Emergency Planning establishment formed -Mar. 74	
		1975-	Apr. 75 -Ontario budget: replace EMO
		EPC meets with Mun.	Dec. 75 -EMO replaced by lead ministries in O-I-C
		1977- AEPO formed -Jul. 77	
		1978-	Jan. 78 -additional Lead Ministries named.